KAVERIPATTINAM EXCAVATIONS 1963-73

(A PORT CITY ON THE TAMILNADU COAST)

K. V. SOUNDARA RAJAN

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WITH CONTRIBUTIONS FROM :

DR. K. V. RAMAN

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PREFACE

Intermittent excavations at Kaveripattinam (Tamil Nadu) had been carried out by the Archaeological Survey of India between 1963-73. Notwithstanding the importance of the result of the excavation, as briefly reported in *Indian Archaeology - A Review* for the concerned years, the full report on the excavations had been delayed for about a decade and more. Sometime ago, it was suggested by the Director General, Archaeological Survey of India, that I should undertake this work, well after my retirement now. The task was onerous, but I readily agreed to the request, not merely because I was myself associated with the digs between 1970-74, but because there was a keen need felt all around that the Report on this site should not be further delayed. I am indeed thankful to Shri Jagat Pati Joshi, Director General, for having reposed faith in my promptly carrying out the writing of the Report, notwithstanding the fact that several hands had helped me with the ancillaries to the report. I hope the scholars would welcome the publication of this report which, in a way, helps in laying the archaeological foundations for the early cultural study of Tamil Nadu. My aim had been to make it compact, without leaving all relevant details, in the technical data, illustrations and pottery. The Report which includes contributions from Dr. K. V. Raman, my former colleague, should also stimulate further probes, both at Kaveripattinam and in the coastal port centres of Tamil Nadu, through various means, now available, for on-shore and off-shore studies.

Chaitra Sankramana, 1990 **K.V. Soundara Rajan**

New Delhi.

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CHAPTER I

INTRODUCTORY

The archaeology of Tamil Nadu had been intermittently and, it would seem, fitfully unravelled in its field work, over the nineteenth century to current twentieth century, first by the missionary scholars of the Colonial period, among whom Bishop Caldwell may be cited as notable, and the early pioneers of the Archaeological Survey of India, like Alexander Rea, Hultzsch and Longhurst. The area had, however, been put on the prehistoric map of India earlier by the distinguished geologist and scholar, Richard Bruce Foote. Subsequently, outstanding expositions had been made by Mortimer Wheeler, as the Director General of the Archaeological Survey of India, who gave the first definitive 'datum line' to south Indian archaeology while re-examining the earlier pioneering work of the French savant Jouveau Dubreuil, around Pondicherry, by his excavations at Arikamedu, the Indo-Roman trading station, known to classical geographers as 'Podouke', as the type-site of the Roman Arretine and Rouletted ware in India.

Later, scholars of the Survey and of the University of Madras like V. D. Krishnaswami, K. R. Srinivasan, N. R. Banerjee, S. R. Rao and the author of the present report, on the one hand, and T. V. Mahalingam and K. V. Raman (both of the University of Madras), besides R. Nagaswami of the State Department of Archaeology, on the other, conducted explorations and excavations on the further facets of early Tamil Nadu cultures of the Stone Age, Iron Age, Megalithic cultures and the the early historic periods, as at Attirambakkam, Sanur, Sengamedu, Uraiyur, Tirukkampuliyur, Alagarai, Nattamedu and Korkai.

Meanwhile, a corpus of what are called 'Tamil Brahmi' records in the several dozens of natural cavern shelters of Tamil Nadu, known already earlier, were assiduously and penetratively examined by I. Mahadevan, K. G. Krishnan and a host of others, giving these a broad coevality and continuity with Asokan Brahmi, which was earlier surmised from the Arikamedu pottery labels etc., in this script variety of Tamil, as part of that Excavation Report.

The sixties and seventies of the current century then witnessed a spurt in the disentangling of the specific knotty problems related to the chronological basis for the literary, monumental and culture elan of early Tamil society, through the tools of archaeological explorations in the delta region of Kaveripattinam, by the Archaeological Survey of India, Southern Circle, at the hands of K.V. Raman (then Technical Assistant in the Survey and later Dy. Superintending Archaeologist and now Professor of Archaeology, University of Madras), as this port-city had been seen as a highly potential ancient landmark in the history of the land, under the early 'Sangam' Cholas and even prior to it, spanning pre-Christian to early historic epochs of urn burials, maritime Roman trade and crucial role in the Tamil epic *Silappadikaram*, variously. It was thought as having the best chance for yielding a cogent scheme of the development of the material culture of the Tamil land. The author expresses

his gratitude for Dr. K.V. Raman, for the first systemtic explorations conducted by him in the Kaveri delta area, leading to the excavations, and for having kindly contributed the section on 'Historical background' to the present Report. The *Corpus* of his own earlier explorations may also be seen in the Appendix-I to this Report.

This concerted thrust of explortions and subsequent excavations was spread out over and the decade of years from 1963-73, each season devoted to specific though limited probe.

Several officers of the Survey had been responsible for organising the seasonal field work, among whom the names of Sarvashri K.R. Srinivasan, R. Subramanyam, S.R. Rao, Krishna Deva, the author of the present report, L.K. Srinivasan and B. Narasimaiah, then Exploration Assistant and now the Superintending Archaeologist, Madras Circle, Madras would deserve mention.

The work at each time was assisted by a group of technical staff, among whom it is desired to mention Sarvashri V. N. Srinivasa Desikhan, Chandrasekharan, C. Krishnamurti and T. S. Iyengar, all Exploration Assistants then, besides K.V. Raman who participated in almost all the seasons of excavations. Thanks are also due to Dr. V. V. Rao, Anthropologist in the Excavations Branch of the Survey. Sarvashri K. P. Balakrishnan, the experienced Foreman (then), R. Balarman, Draughtsman, Nambiraju, Surveyor, T. Palani and T. Elumalai, Photographers, T.G. Krishnaswami, Marksman and B. Krishna Rao, Driver-Mechanic would also deserve thankful mention. The Conservation Assistants, S. Srinivasan and M.G. Chell Pillai assisted in the general camp and field organisation and later in the conservation of some of the structural remains. Sarvashri P.R.K. Prasad, S.V. Rao, Senior Technical Assistants, K. Dayalan, Technical Asistant and T. Ganesan (Surveyor then and later Dy. Engineer) had helped much. Sarvashri S.V. Rao, Dayalan and K.P. Balakrishnan toiled later with the author of this Report in taking out, sorting and sitewise and layerwise spreading of the material (stored in Madras unattended for over a decade and more) for their study by the author.

In the work of finally collating all the excavated material, analysing and preparing this Report, entrusted to the author (first mooted by Dr. M.S. Nagaraja Rao, a former Director General) it was eventually Shri J.P. Joshi the present Director General, who took a leading initiative and provided all the requisite contexts of assistance, for which the author expresses his unreserved acknowledgement and thanks.

Shri M.S. Mani (former Draughtsman, Headquarters), now retired, had painstakingly prepared all the drawings (apart from Balaraman and T.G. Krishnaswami cited earlier), all of whom merit thanks.

Finally, the task of typing out the report had been carried out with his wonted efficiency and promptness by Shri R. Ramani, Stengorapher, Madras Circle (now retired) though entrusted after his retirement.

Opportunity is taken also to remember with gratitude the assistance of such interested and enlightened gentry (both local and from Madras) like Shri N. Thyagarajan, land lord, Melaperumpallam

and (late) V. Rajan of Murray & Co., Madras, for their sustained help and encouragement in the period of explorations and excavations. Thanks are also due to Shri Bholanath, Supdtg. Zoologist, Zoological Survey of India, for his kind report on the animal remains.

The Lower Kaveri Valley, starting from Uraiyur, its traditional early Chola capital before Christ, was conterminous in its history, with that of the Chola dynasty, of which the legendary Karikala was a pioneer in reclamaion of the deltaic land and initiation of irrigation facilities, by erection of barrages. This Karikala is generally placed in the 'Sangam' period, but the Cholas has already earlier been mentioned by Asoka, along with Pandyas, Atiyamans and Keralaputras. These together tie up the literary, secular, civic, commercial and spiritual moorings of the Tamil region into one harmonious fabric and definitely implicate fairly well consolidated rural and urban prosperity and habitat in the centuries round Asoka, as the Iron Age Megalithic Culture, so rich in Tamil Nadu from mid-first millennium B.C. at least, undersores. These burial cultures heralded the systematic hoe-cultivations, with a prolific iron tool equipment as well as pottery fabrics and superseded the other ethnic strains of the autochthons of the stone ages and the Chalcolithic diffusion from lower Deccan in post-Harappan stages. Out of this mingled and seemingly miscegenated crucible, the Tamil ethnic genius appears to have emerged and was moulded into an individualistic community. This was certainly the period also of much cultural interaction with the rest of south India, particularly with the Krishna Valley where early Buddhism flourished, and was linked on the other to the south, across the Mannar gulf, with Sri Lanka also, on the same spiritual plane. The Tamil region was then parcelled into several sub-regional chieftaincies of sturdy character, valour and idealism which instilled a cultural, aesthetic and fraternal unit among these rulers and their subjects. The proximate period of this situation has also coincided with a major maritime enterprise of the Tamils with Mediterranean Rome whose trade presence on the eastern coast of Tamil Nadu formed a viable and distinctive phenomenon of ports and marts. Cosmopolitanism, eclecticism and commercial enterprise had resulted, and of these ports, Kaveripattinam was an outstanding centre and formed the key area for understanding the burgeoning regional culture of Tamil Nadu, which the present report of the excavations in this port tends to reveal on archaeologically authentic grounds.

The Setting of the Region

Archaeologically, the cultural sequences of Tamil Nadu was well served in the studies of its Stone Ages (Palaeolithic and Neolithic) and in the succeeding Megalithic cultures, which last became the substratum matrix for the blossoming of the Tamil cultural milieu, and were stimulated by Imperial Asokan tradition, on the one hand and farther afield, by the well established maritime traditions with Imperial Rome and the classical period of the Mediterranean empires of Greece, Egypt and Italy in the centuries from either side of the Christian epoch. The trade contacts with peninsular India which these nations of the Mediterranean had, was in two waves, the overland and the sea-borne with the Indian ocean littoral of India. The latter was itself in two distinctive stages; circumpeninsular prior to, and after the advent of the monsoon trade-winds discovered by Hippalas,

the Greek galley in the first century A.D. respectively. The impacts of these two stages are seen in the western Indian coasts from Barygaza (modern Broach) in Gujarat, all along the coast, revealing a string of ports like Kalliyana, Sopara, Nelcynda, Mauziris and the Kumari cape (Koti) and Korkai. At that terminal southern tip of the Indian peninsula, the Palk straits which separate the mainland of India from Sri Lanka (Ceylon or Taprobane of the classical geographers) had resulted in the typical ports of the Mannar gulf in both India, as at Korkai (Colchoi of Ptolemy) and the Manthai port of Jaffna, Sri Lanka, north-west coastal bay enclave. At that time, only a circum-Sri Lanka route could have brought the trading boats into the Bay of Bengal beyond Palk straits northwards on to the ports of Coromandal (Cholamandala) coast and further along the Circars (Andhra) coast right upto Tamluk on the Ganga estuary in Bengal. But this latter event in the Bay of Bengal was facilitated, for direct contact, after the monsoon winds alluded to above; and thus from the first century A.D. this northerly east coast string of ports of India flourish. There had been earlier short direct links between Sri Lanka and Tamil Nadu coast of Nagapattinam, Kaveripattinam and Melange (Mahabalipuram) and further on to Maisolia, Kalinga, etc., independently. But another interesting *intra-peninsular* link through the Chera (Kerala) coast, across Palghat and Coimbatore tracts into the east coast of Tamil Nadu is simultaneously revealed by the occurrence of Roman gold coin hoards in Palghat-Coimbatore tract and antiquities like Amphorae, 'Rouletted' were, etc. This dual or two-pronged link with the southern-most coastal marts of Tamil Nadu had been fraught with great cultural consequences which, right from the time of the Mauryas (Megasthenes) and upto the classical 'Sangam' epoch, Tamil culture proclaims, lifting the history of Tamil Nadu from the mists of its pre-Christian legendary eras in the second half of the first millennium B.C. to the well-established regional culture of the Tamils in the very opening centuries of the Christian era, of great stamina and semi-urban richness of civic and political life style whose basal culture was of the Iron Age Megalithic milieu. This situation is queered also by the impregnation of and intrusions of the Buddhist-Jaina religious activities into both mainland Tamil Nadu and insular Sri Lanka (particularly for early Buddhism of the *Theravada* school) in a bridging period between third century B.C.-second-third century A.D. The sequel to this is to be seen in the flourishing literary, scriptal and cultural matrix in lower Tamil Nadu, especially in and around the capital towns of the Pandya, Chola and Chera kingdoms of this period.

While the Jaina vestiges were found deeply entrenched in the Pandyan kingdom of yore forming the lowest part of Tamil Nadu, the intra-peninsular and coastal stretch of the Kaveri valley—through which former had links with the Chera kingdom nucleated at Karur-Vanji (now in western parts of Tiruchirapalli district) had Buddhist links. The Kaveri esturary was the home of the early Cholas who along with Pandyas and Satiyaputras had merited respectful mention in the Asoka edicts as his brother kingdoms. The pervading character of Tamil culture is all these three kingdoms, Pandya, Chola and Chera—who had unified ethnic and culture filiations— was revealed in the earliest of epic literary contexts, as in *Silappadikarm*— which was a story which linked, in its scenario, all the three kingdoms named above. The event of this Tamil epic was laid in the period of Senguttuvan, the Chera king (whose brother, prince Ilango, was the traditional author of this epic),

the Pandyan king Neduncheliyan of Madurai, and the Chola kingdom of Valavan who ruled from Uraipur (now a suburb of Tiruchirapalli and on Kaveri) with its most well known port of Kaveripattinam or Puhar. Maduraikanji and Pattinappalai directly refer to the Pandya and Chola port towns of Korkai and Puhar. This port city was indeed the locale where the story begins in the epic, around the life of a merchant potentate Kovalan, his chaste wife Kannagi and the colourful dancing girl, Madhavi of Puhar, whom Kovalan got enamoured with. This event is seen by historians as of co-eval date with king Gajabahu of Srilanka who was a contemporary of Chera king Senguttuvan in the late second century A.D. The life of Kaveripattinam—the chief port of the Cholas— is thus bridging the period from the last three centuries of the pre-Christian era (from its Mauryan coevality) to the second century A.D. at which latter chrono-cultural point, the event and story of the epic *Silappadikaram* commenced. This epic, as we see it now, had been retold in the sixth-seventh century A.D. by the transformation of its linguistic-cultural textual evidence, but putatively in the name of Ilango of the second century A.D. and becomes continued in the other sister epic of *Manimekhalai* which deals with the child born to Kovalan and Madhavi-with which we are not concerned here. This former epic makes it amply clear that Puhar or Kaveripattinam was a flourishing port of the Cholas and gives the secular, religious and trade activities centred around the several sectors of this port town. This picture, is broadly well sustained, in totality by the activities forming part of the excavated remains discovered now from the several suburbs of Kaveripattinam, from third century B.C.— ninth-tenth century A.D. thereby, even if it be as an echo only, giving credibility to the cultural information contained in the epic of *Silappadikaram.*

More importantly, the excavated remains, in their basic chronological sequence, bear out the antecedent stages of the cultural temper of Tamil Nadu, in the more hazy periods of its pre-Christian and early historic times, leading to the rise of the Imperial Cholas, once again, on the cultural map of Tamil Nadu, to bequeath a still more resplendant chapter of south Indian history and culture. It is well entwined with Buddhist religion, and reveals notable links with Tamil Nadu and the Buddhist centres, as at Amaravati and Nagarajunakonda, on the Krishna Valley. Materially as well, the excavated remains and the antiquities, display the impressive landmarks in the life style of theTamil of these periods. In one way and another, Kaveripattinam excavations had disclosed the foundational construct of the cultural epochs of early Tamil Nadu which, as we had mentioned at the outset, filled the rather dark period, archaeologically speaking, succeeding or partly overlapping with the period of funerary cultures associated with Megaliths in the Iron Age and the process of urbanisation of the Tamil civic matrix.

It is not to be deemed that Kaveripattinam excavations (which this report deals with) had exhaustively revealed its archaeological potential. The nature of this deltaic tract is such that loction for excavations would not be easy to determine, in order to bring out definitive structural and cultural edifices and data, and indeed chance would play a part in future investigations into this tract to reveal other links of the times. But the tool of archaeology, as reflected in the several seasons of excavation

activity, each confined in space and time, had been able to show the cultural frame-work of early Tamil Nadu for the period which had so far lacked archaeological sustenance.

The history of Tamil Nadu prior to the Christian era is shrouded in legends and tenuous events. The Sangam anthologies, is mostly taken as datable to the first four centuries of the Christian era, by discerning Tamil scholars (Vaiyapuri Pillai - *History of Tamil Literature),* which though culturally rich and varied, leaves the foundation for Tamil annals in the preceding centuries unsatisfactorily told yet. The Asokan reference is a bright spot and in recent decades had been reinforced by epigraphical records in what is called Tamil-Brahmi script, in such a way that we may firmly hold its pre-Christian antecedents culturally and linguistically as viable, individualistic and socio-economically tenable. It is not by accident that these records, mostly associated with natural caverns where donors had provided some *'dhammam'* or pious services for Jain monks, seemingly of the Digambara order, are found clustered around the capital cities of the triple crowned heads of the Pandya, Chola and Chera lineage. This, combined with the fact that Jainism had diffused into south India, as deeply as the very southern tip of theTamil country, already in the closing centuries of the Mauryan period of the Ganga Valley, centred in the Magadha tract of Bihar, in the second and first centuries B.C. if not earlier, enables us to view a flourishing social condition in the Tamil land, notwithstanding the fact that these triple kings had patronised religious movements other than Jainism also, as of the brahmanical order. Indeed the 'Sangam' or the *Tamil Academy* located in the sacred precincts of the temple at Madurai and legendarily taken as presided over by Siva himself, apart from the association of the foundation of Tamil literary culture with Agastya in the Podiyil hill of the Pandyan kingdom, leave us in no doubt on this. References to the Pandyas by Megasthenes, the Greek ambassador in the Mauryan court, add to the strength of this position. On the side of material remains which are in the realms of the study of archaeology, we seem to have mainly the port cities of the times like Korkai, Muziris and Puhar (Kaveripattinam) which had been operating as the chief maritime sources for pearl, pepper, cardamom and other commodities that the Imperial Greece and Rome seem to have incessantly demanded, which had been thus made possible by the maritime trade of Tamil kingdoms with these Mediterranean lands. Broadly speaking, the ethno-sociology of Tamil tract has been highlighted by the Australoid races, associable with the Stone Age situation (these being later on, seen in aboriginal state), the brachycephalic and Negritoid strains seen in the protohistoric Neolithic-Chalcolithic sites and times of lower southern India, the long headed (Mediterranean-Indus) folk of seemingly Dravidian stock, associable with the raising of sepulchral Megalithic tombs and urn burials, in the Iron Age, given to the introduction of agriculture through irrigation tanks; which last, by its ceramic affiliation in the form of 'Black and Red ware' gets interlocked, in their later stages, with the typical Roman pottery wares of the late B.Cs. and early A.Ds. in the form of Arretine and 'Rouletted' wares, in order to provide the most acceptable chronological frame work for the story of mankind, in the deep South.

While literary traditions of the 'Sangam' anthologies and other inscribed Tamil-Brahmi records give several vignettes of socio-economic, socio-cultural and socio-religious life of the

common people here, laying bare their material remains in a systematic manner through the tools of archaeological research had been spearheaded by Wheeler's excavations at Arikamedu and had opened out a convenient means of linking, other such data of the Iron Age a plausible scheme, before and after the Christian epoch. Even so, as only painstaking and continuous excavation of archaeological sites of presumed antiquity can reveal the *life* of the times, and fix *on the ground* the ingredients of the till then elusive Tamil genius and cultural growth, the efforts in the direction have an importance which cannot be ever under-estimated.

In this context, the excavations in the Kaveri Valley, at and around the port-town of Kaveripattinam, not only has a significant importance but also lifts the history of the Tamils from the mist of legends into a virtually acceptable social life style. The ancillary studies in the operational thrust of maritime activities of exotic Rome and Greece, on the Indian shores, often with the people of these lands in domicile here-which literary heritage of the Tamils had already waxed eloquent on-became a ringing reality. These lead one to consider the established social order, polity and cultural and economic programmes of the Tamils as having been moored well in the periods between the middle of the first millennium B.C. and the Christian epoch, whereafter there is a steady increment of cultural bequeathal, century after century, and corporate activities of several communities, not necessarily native to the land, now added many illuminating pages of the story. All this, the excavations at Kaveripattinam reveals with some consistency of development.

CHAPTER II

HISTORICAL BACKGROUND

Kaveripattinam (also Kaveripumpattinam) or Pumpuhar, the celebrated port-town of the early Cholas is now an insignificant fisherman's hamlet on the eastern coast of Tamil Nadu where the river Kaveri joins the sea (pl. IA). It is now located in the Mayiladuthurai Taluk of district Thanjavur. The two names mentioned above literally mean the 'city at the mouth of the Kaveri'. Several Tamil classics of the Sangam and the post-Sangam have eulogised the city and its flourishing commerce, its well planned lay-out, beautiful mansions, the busy harbour not to speak of its temples and monasteries. The *Pattinappalai*, is a full-length poem on this city (*Pattinam*) and one of the ten idylls and datable to the middle of the second century A.D.[1] gives a graphic account of the various articles of trade imported from other parts of the country and abroad. It mentions that horses with noble gait arrived by the sea; gems and golds from the northern mountain; sandal from the western hills; pearls from the southern sea; coral from the western sea; products of the Ganga valley, the yield of the Kaveri; the food-stuffs from Ceylon and many other articles from Burma (Kalagam).[2] The poem also mentions that traders from many good countries speaking different tongues stay in the city on terms of mutual friendship.[3]

The twin epics *Silappadikaram* and the *Manimekhalai* generally dated to the fifth or sixth centuries A.D. relate their stories mainly centering the city of Pumpuhar. The hero and the heroines of the former were the noble citizens of the city. Kovalan, the hero, was a leading merchant-king of the city. It contains a vivid description of the "noble and venerable city". It describes the lay out of the city which was in two parts, the harbour and the ware-house area near the coast (Maruvurpakkam) and the palace and the habitation area in the interior (Pattinapakkam) and both connected by a long and broad road where markets were held. It mentions that the city was beautified by artisans from different places like Avanti, Ujjain, etc. It also mentions the presence of the Yavanas (Romans). It also records the existence of the temple for Vishnu (Krishna), Balarama, Siva, Karttikeya, besides Buddhist monasteries.

The *Manimekhalai* relates the story of Kovalan's daughter Manimekhalai, who renounced the world and embraced Buddhism and spread the message of Buddha in different centres of Tamil Nadu

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[1] K.A. Nilakanta Sastri, *The Colas*.

[2] *Pattinappalai* - lines 184-193

[3] *Ibid.*, lines 213-217

* This chapter has been kindly contributed by Dr. K. V. Raman (now Professor & Head, Deptt. of Archaeology, University of Madras).

like Vanji, the capital of the Cheras and Kanchi. From this work, we learn the presence of the Buddhist establishments at Kaveripattinam. The work also mentions that goddess Champapathi was the guardian deity of the city of Pumpuhar and indeed the Jambudvipa as a whole (Jampodvipa Kavardeivam). She was venerated by all the people as she was the "Grand-old-lady" (*Thonmūtātti*). There is an old and dilapidated brick temple at Kaveripattinam dedicated to Champapathi Amman.*

The foreign notices on Kaveripumpattinam are illuminating. There is reference in the *Periplus* to the two capitals of the Cholas in the region inland called Argaru (Uraiyur) and 'the coast country which lies on a bay', the latter obviously referring to the port city or the Pattinam. Ptolemy is more specific and he refers to the city as the 'Kaberis Emporion'. The early Prakrit literature of the Buddhists make references to the city. The question of king Milinda, a work of the beginning of the Christian era, refers to this city as Kolapattana, one of the best known ports of the times. In the Buddhist *Jataka* story, certain Akitti is said to have settled down in one of the gardens near Kaveripattinam.

But this great city, according to the epic *Manimekhalai,* was destroyed by the sea during the time of the Chola king Ilangkilli. The Epic mentions that the Chola king had lost his son and in his great grief he forgot to celebrate the annual Indra festival. This enraged the goddess Manimekhalai who caused the city to be swallowed by the sea *(aninagarantannai alaikadal kolga).* Though the reference is only to a supernatural incident, it may be taken as an echo of some actual sea erosion of high tidal wave that lashed upon the city. It was still in a good state even in the fifth century A.D. when Buddhadatta, the great Buddhist scholar and poet, stayed in a Vihara and wrote his Prakrit work, the *Abhidammavatara*. This work describes the city thus: "Kaveripattinam is inhabited by men and women of noble descent. The city is complete in all aspects and presented a beautiful appearance. There are many bazaars selling goods like precious gems. The city is full of lofty and palatial mansions, beautified with entrance towers"

In the seventh century A. D. Sayavanam and Pallavanesvaram, two suburbs of Kaveripattinam, were sung by Tevaram hymners - Appar and Sambandar. They refer to the places as "Kaveripumpattinattu Pallavaneswaram" and "Puhar Sayakkadu" clearly making reference to the present town Puhar. Inscriptions of the eleventh and twelfth centuries A.D. found in the temples at Sayavanam, mention the latter place as a part of Kaveripattinam in Nangur-nadu a sub division of Rajadhirajavalanadu.[1] These epigraphical references indicate that the memory of the hallowed name of the ancient city continued to persist amongst the people even during the mediaeval days.

It was a long felt desire that archaeological investigations should be made in this area to locate at least some portions of the vestiges of the 'lost' city. In 1962, the Archaeological Survey of India,

* Its premises have also been excavated as part of the activity dealt with this Report.

[1]261 to 273 of 1911

Southern Circle sent out a team to explore the area systematically and record the vestiges of the ancient sites. But the extensive cultivation in the fertile and deltaic area where every inch was brought under the plough and the vast sandy stretch along the coast were a positive handicap for any explorer. Even the river Kaveri, which was once very broad here, has dwindled into a small stream, thanks to the hundreds of the irrigational channels that were cut into during the early and mediaeval times. For an archaeologist, at first sight, the place presented a flat and dismal picture devoid of any mounds or notable landmarks. But, the team covered the area from hamlet to hamlet and on the sandy stretches, the cultivated fields, the vicinity of the temples and the vacant spaces amidst the present day dwellings. These efforts were fruitful and one got valuable evidence of the ancient city.

Surface explorations on the beach revealed the vestiges of ancient habitations like the ring-wells, pottery, bricks and brick bats and beads. The ring-wells were covered by sand. Habitation sites going back to the time when the city was at the zenith of its glory, have been noticed at places like Vanagiri, Neithavasal and Kilaiyur. Vanagiri yielded very interesting finds from the surface. Square copper coins, bearing the royal crest of the Cholas, viz., the tiger on one side and the elephant on the other, Black and red potsherds and the beads of semiprecious stones were found on the surface at the sites. Rouletted pottery of both grey and black fabric were also found. A Roman coin was found in the site called Vellaiyan Iruppu. Several beautiful terracotta figurines were found at places like Melapperumpallam, all showing that these places were once the centres of early culture and activities.

Among the important early types of pottery collected on the surface, the black and red ware datable not later than the first or second century A.D. was found extensively in and around the village of Kaveripattinam, in places like Vanagiri, Manigramam, Kilaiyur, Tiruvalampuram (Melapperumpallam) etc. The 'rouletted' ware was found at places like Vanagiri, Vellaiyan Iruppu and Manigramam. Besides this, associated red-slipped ware and black ware were recovered at different places.

Urn-burials associated with Megalithic Black and red ware were found *in situ* in Melapperumpallam (pl. IB) and Manigramam, indicating the prevalence of this practice in this coastal area. Since there is no natural out-crop of rock in the vicinity, the urns are found without any Megalithic stone appendage The mention of the urn-burial practice in the ancient Tamil Sangam and post-Sangam works like the *Purananuru* and the *Manimekhalai* variously is very significant in this context.

Another significant category of artefacts found in the exploration is represented by numerous beads in various stages of manufacture made out of semiprecious stones like the carnelian, chalcedony, banded agate, red and green jasper etc., at Vanagiri and Manigramam. Particularly noteworthy were the long segmented and collared beads, the discular shell beads and bangles indicating a flourishing bead industry in the early times.

Amongst the coin finds, mention should be made of the discovery of a punch-marked coin at Manigramam, a lead Roman coin at Vellaiyan Iruppu, the unique square copper coin with tiger emblem (apparently of the early Cholas), besides a number of coins belonging to the kings of the mediaeval Cholas like Rajaraja I and Rajendra I.

It was during the exploration that some structural remains were noticed at three places - Kilaiyur, Pallavaneswaram and Vanagiri. Unusually large-sized bricks were collected besides ancient pottery. These were taken up for detailed excavations in the subsequent years.[1]

A detailed list of places explored, sites discovered and the nature of surface finds is given separately in the Appendix I.

[1] A brief account of the explorations and the excavations was published in 1968 by K. V. Raman, *Excavations at Pumpuhar*, Handbook published by II International Tamil Conference, Madras, 1968.

CHAPTER III

PROBLEM AND APPROACH

As mentioned already in Chapter II, the historical framework of the Kaveri basin of Tamil Nadu in the centuries before and immediately after the Christian epoch had to be firmly laid, on the ground, only through archaeological field work and a working sequence of the phases through which it was developing made out. This meant that excavations had to be conducted to establish the material cultural growth, almost century by century in the eventful antecedent periods prior to the advent of the Pallavas of Kanchi of the Simha Vishnu line (*c.* 500 A.D.) from whose times, we seem to follow the history of Tamil Nadu more clearly, leading to the rise, once again, of the putative Chola power, under Vijayalaya in the ninth century A.D. It was thus essential that the foundations of the cultural history of the Kaveri basin from the pre-Christian centuries and early historic Indo-Roman times down to the advent of regional kingdoms like Pallavas and Cholas who had shaped its destiny and under the Imperial Cholas reached the apogee of Tamil culture in the tenth century A.D. under Aditya I, Parantaka I and Raja Raja I, had to be firmly laid in the earliest stages, which had mostly literary traditions of the 'Sangam' period to speak about their calibre. Since the spade of the archaeologist alone as it unravelled the Indo-Roman period at Arikamedu (Wheeler, A. Ghosh and K. Deva, *Ancient India,* no. 2, 1945), would reveal the definitive stages of cultural growth the explorations of the neighbourhood of Kaveripattinam - by far the best known port city of the Tamil Cholas - needed to be conducted and were duly carried out. These explorations yielded significant landmark material remains to which Chapter II by Raman refers, like pottery, urn-burials, coins and metallic objects in the various villages, sites around Kaveripattinam. Their inter-relationship for reconstruction of history was obviously needed to be brought out by excavations giving a chrono-cultural authenticity to the whole story. Around Kaveripattinam, the port, itself in the village of Kilaiyur, there were several sub-urban habitations like, Melapperumpallam, Vanagiri, Melayur, Pallavanesvaram, Manigramam and Vellaiyan Iruppu which had yielded sporadic archaeological data, as narrated in Chapter II. These had to be woven into firm correlative sequence. As much of the revenue land of these habitations were cultivated lands and the physiography of the entire deltaic tract had been subjected to several changes of land use and surface changes, archaeological probe in the form of stratigraphic trenching and linking suffered severe technical problems and limitations.

It was, therefore, planned to make viable examination of individual sites mentioned above (which had shown surface relics) by well laid out archaeological digs and through the overlaps which should obviously exist among these, to correlate and reconstruct the continuous spectrum of life style and activity in the entire delta region in the process. One is happy to record that this approach had indeed yielded fruit and had brought out the cultural development of the tract and, with it, of the port town, in its significant stages virtually from the third-second century B.C. onwards to the tenth

century A.D. Stratigraphic evidence dealt with further in this report and the frequency and changes in the antiquity range in each of the phases, had significantly enriched the totality of the historic annals of the port-city. They also gave not only hitherto unknown and significantly buried vestiges, as of inlet channel structure (pl. IIA), wharf structure (pl. II B), Buddhist monastic complex (pls. III and IVA) and the eventful devolution of the place in the premediaeval centuries between eighth-tenth century, in a manner that also suggested shifts in location and life cycle and expansion of life style in culture, trade, religion and civic proportions. The sequential localities thus are, in their order, Kilaiyur, Vanagiri, Pallavaneswaram, Manigramam and Vellaiyan Iruppu, the last in the hinterland of the port locality and Sampapati Amman temple site loomed large in the historical periods (pl. IVB).

One of the important legendary references on Kaveripattinam, related to its having been engulfed by the encroachment of the sea. Indeed the problem of need for under-sea archaeology had been seriously raised in the last two decades and rested on this premise, though S.R. Rao has now taken an initiative in this. Without necessarily foreclosing any hypothesis based on such an outlook and programme, it would be relevant to state that the systematic study of the excavated site locations, as above, and their antiquity range, chronological implications and topographical nexus, would seem to show that perhaps the legendary marine incursion was only a temporary event and was followed by the withdrawal of this encroachment to *its present coast line.* Otherwise, such a close and complete chronological sequence would not have been feasible, including the port activity of the wharf site which was located in the back-water lagoon at Mangaimadam locality in the Kilayur area and its own stratigraphic details of deposits, beginning from fluviatile sand, through alluvial silt and compact clay horizons, succeeded by the artificial, compact earthen layers of the later hinterland stages as at Vellaiyan Iruppu, as the integrated reconstruction of the soil profiles and the cultural matrices arrived at will reveal. This had also indicated, *indirectly though,* the approximate chronological stage when the incursion of the sea could have taken place and how after that landmark event, the shift of civic activity, well outside the ambit of the marine transgression to the west, as at Vellaiyan Iruppu, provided the most sedate life activity combined with rich antiquity and pottery remains at that stage and in a maximum thickness for the cultural deposits themselves, as compared with the working horizons of the earlier stages and localities in the delta.

Although within this framework, further off-shore and on-shore probes in adventitious locations in future may yield, if lucky, many more structural vestiges useful for cultural reconstruction, they might not fall outside the ambit of the chronological framework suggested in this report, as collated from the excavated data.

There was thus the exclusive application of limited horizontal layout of trenches in promising locations and the correlation of the structural and chronological data with one another, for this sequence to emerge. No vertical trenching was either necessary or fruitful. The details of these cuttings and the structural vestiges are thus dealt with in the next chapter.

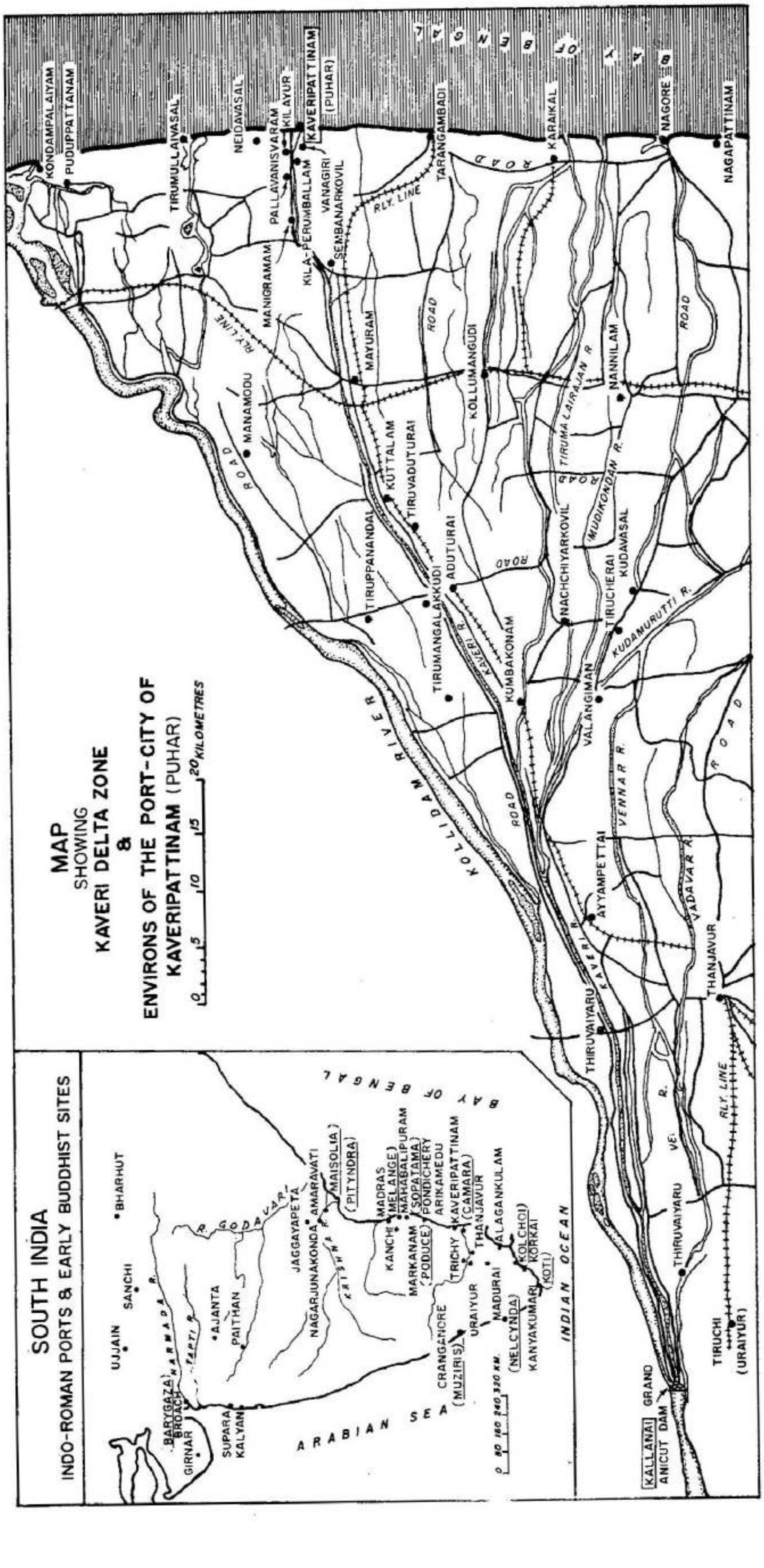

MAP
SHOWING
KAVERI DELTA ZONE
&
ENVIRONS OF THE PORT-CITY OF
KAVERIPATTINAM (PUHAR)
SOUTH INDIA
INDO-ROMAN PORTS & EARLY BUDDHIST SITES
BAY OF BENGAL
ARABIAN SEA
INDIAN OCEAN
KOLLIDAM RIVER

FIG. 1

The Site

Kaveripattinam (Lat. 11°12' 50", Long. 79° 52' 50") Pumpuhar or Puhar, and 'Khaberis emporion on 'Camara' by classical geographers, is one of the most outstanding port-cities of the Kaveri delta, on the Coromandal (Chola mandala) coast of Tamil Nadu (fig.1). It had the historical importance and relevance of having knit together the three well known and early kingdoms of lower Tamil Nadu, namely, the Cholas, Pandyas and Cheras, in the period from the pre-Christian centuries to the time the Imperial Cholas rose under Vijayalaya to build a major and significant Imperial rule over the Rajendra I, his son and successor. By the time the Imperial Cholas were superseḍed by the Second Pandyaṇ empire from or after the rule of Kuluttunga III, under Maravarman Sundara Pandya, it had already established itself as the most dominant political power which claimed not only a well knit political and economic system, but also of high cultural achievements. It maintained a naval fleet of its own and had overseas colonies in Lakkadives and Maldives on the Arabian sea and Kadaram (Khedda of present day Malaysia) in the South Asian Archipelago across the Bay of Bengal and also on the northern and eastern part of Sri Lanka. It presented the comprehensive kingdom of Tamil Nadu which included Kerala also then, by consistent political conquests by invasion and war and represented in the Integrated Tamil culture, in the fields of administrative framework, fine arts, temple building and inscribed records of high historical and socio-political value.

The early Cholas as already mentioned, had been respectfully mentioned by the Imperial northern Emperor Asoka Maurya along with Pandyas, Satiyaputas (?) Atiyamans and Keralaputas (Kerala tract of the Cheras) in some of his inscriptions, as border kingdoms, outside his rule and sway, in the lower South stretching upto Tambapanni (Taprobane of the classical geographers of the Mediterranean west) taken by scholars as standing for Sri Lanka of today. The early Cholas especially had been great colonisers who were deeply entrenched in the lower Kaveri Valley and its delta region of the present day Thanjavur district of Tamil Nadu, and were ruling from Uraiyur (or Kozhi) on the entrance of the delta tract of Kaveri, very close to the present day Tiruchirapalli town. They had been among the chief kings and patrons of arts and letters mentioned in the Sangam anthologies like *Pattinappalai* and other works, and had been responsible for the opening of the delta area of Kaveri by reclaiming lands for cultivation, digging tanks (*'kadu vetti nadakki, kulam tottu valam perukki'*) under the lengendary Karikala Peruvalattan, and are found named in some of the early Tamil-Brahmi inscriptions of Tamil Nadu from the pre-Christian to early historic times. As seafarers and littoral kingdoms, they had a notable tradition of having promoted trade with the Roman Mediterranean world, and became the prosperous rice-bowl of Tamil Nadu in the historical times.

Physiomorphology of the Kaveri delta tract

The estuarine part of Kaveri river finds it reduced to a narrow attennuated stream, unlikely to be inundated even in the rainy season. This is due to the fact that the enterprising early Cholas whose home stretch the delta country was, launched upon the forking out of the main river at the point not

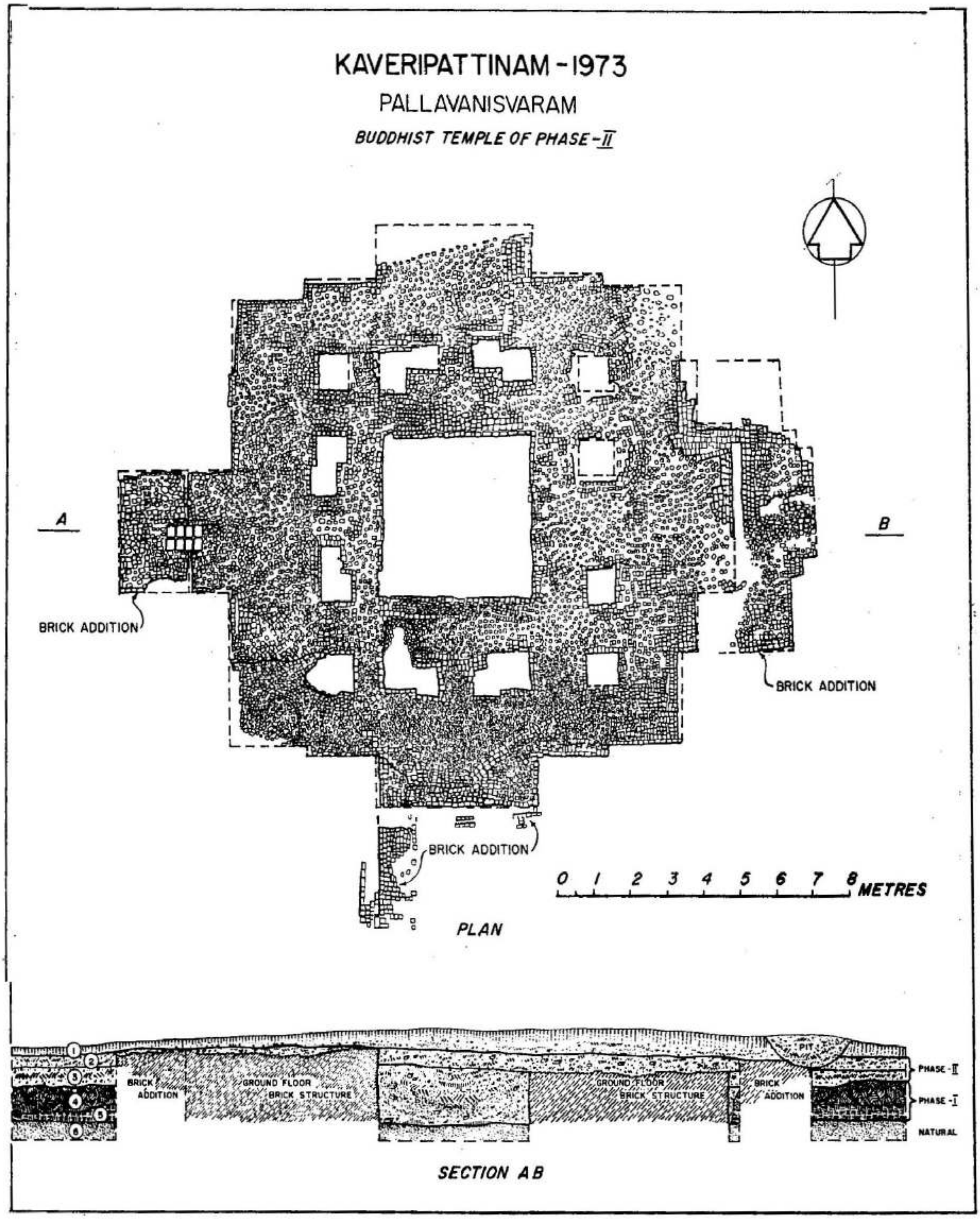

KAVERIPATTINAM - 1973
PALLAVANISVARAM
BUDDHIST TEMPLE OF PHASE-II
A
B
BRICK ADDITION
BRICK ADDITION
BRICK ADDITION
0 1 2 3 4 5 6 7 8 METRES
PLAN
BRICK ADDITION
GROUND FLOOR BRICK STRUCTURE
GROUND FLOOR BRICK STRUCTURE
BRICK ADDITION
PIT
PHASE-II
PHASE-I
NATURAL
SECTION AB

Fig. 2

far downstream from their capital Uraiyur, into several rivulets, by the erection of the barrage of Kallanai (so called by its having been built entirely of stone blocks and also called 'Grand anicut' owing to its having been a feat at that distance of time). Thereafter the controlled streams inundating the entire Thanjavur district down to the sea, made colonisation possible in the otherwise originally marshy and silted triangular zone of the Thanjavur district laid over fluviatile sand. Indeed, such an irrigational enterprise made the tract, by concerted agricultural programmes, the best inhabited and perennially fertile part of the whole of Tamil Nadu, leading to the appellation *'Chola nadu Sorudaittu'* - the Chola kingdom is the major food resource of the Tamils. Thousands of villages sprang on the banks of the five major streams into which the river Kaveri forks downstream of Kallanai and the settlement pattern was a model of its kind, leading to well established larger villages controlling every square inch of land into an agrarian stretch - a feature which is most spectacularly seen by anyone who travels through this district of Thanjavur, seeing seemingly endless stretch of green paddy fields, harvested thrice a year and among which the hundreds of prosperous villages nestle bustling with farming activity and cultural routine contingent upon the exquisitely carved temples which had been erected in the historical period by Imperial Cholas - many of which had been originally of brick and of earlier origin since Kaveri delta does not have any stone resources of its own, downstream of Thanjavur town.

The immediate environs of Kaveripattinam comprising several villages like Manigramam, Melayur, Pallavanesvaram (Melayur), Kilayur, Vellayan Iruppu (Melayur), Melaperumpallum and Vanagiri, apart from several other hamlet locations, had been having an *integrated* activity with Kaveripattinam port-town, getting divided into the sea-port zone (with its backwaters) and the hinterland zone with its linked commercial, social and cultural activity, from the point where the present day road crosses residuary Kaveri stream (which flows south of the road and almost parallel to it thereafter) from Semponnarkoil village.

This delta stetch had thus been an undulating land with estuarine sand as the natural substratum at mean sea level, over which a consistent silt deposit had formed in olden times and overlying which was a dark compact colloidal clay - in testimony of the concerted agricultural taming of the soil and making it water-laden and rich throughout the year. In early historical times, the area north of the residuary estuarine and terminal Kaveri stretch had been somewhat higher, while the tract to the south of the river was a distinctive low land. Villages, like Melaperumpallam (with its early urn-burials also) and Kilapperumpallam in this latter tract (literally meaning the 'great depression' of the western and eastern part) were converted into natural irrigation tanks by erecting channels and sluices for the diversion of monsoon waters of the river into them, for use during summer. It is one such inlet sluice channel (in a north-east and south-west strike) built systematically and efficiently of massive well baked bricks that had been discovered at Vanagiri, while the northern part of the river comprising the village of Kilayur (the eastern village) - as contrasted with Melayur further into the interior - that yielded the unique wharf platform remains for the berthing of boats laden with merchandise, in high tide, so that they could be unloaded and re-loaded for further movements, along

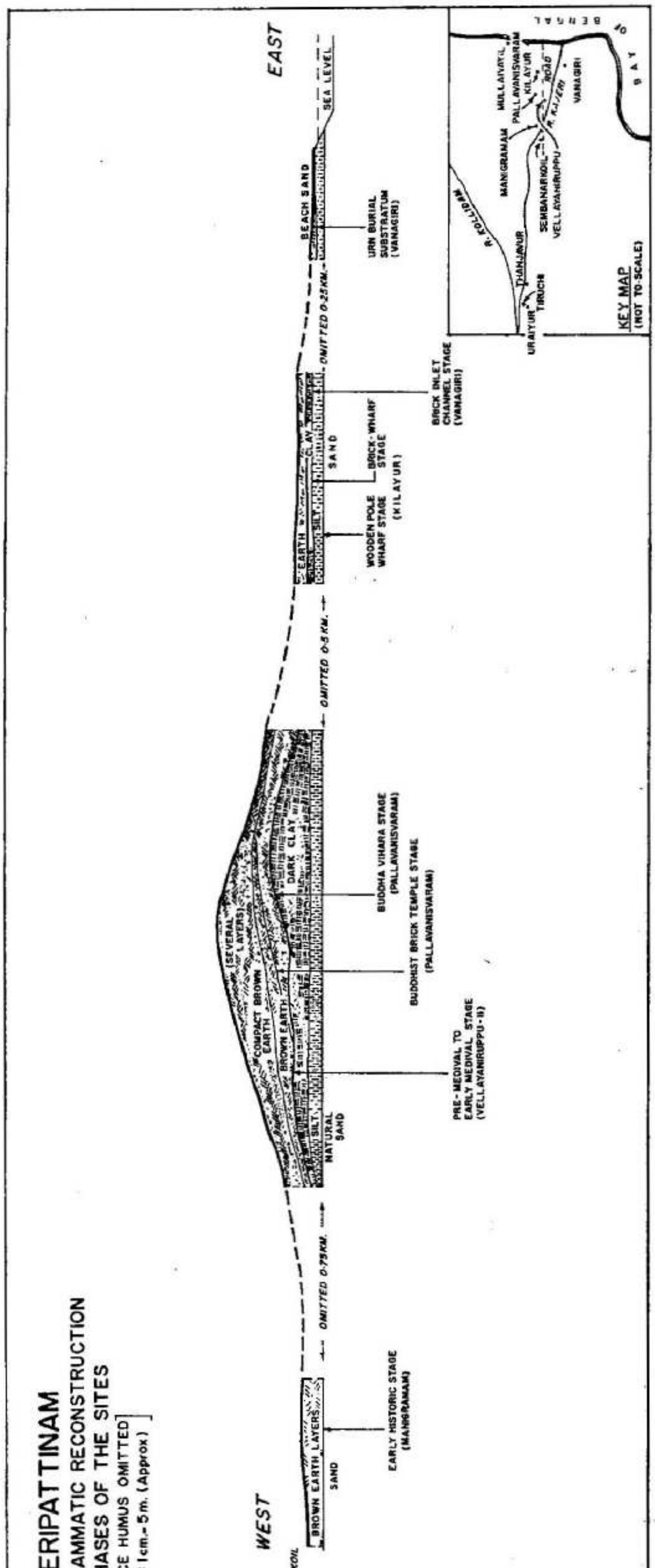

KAVERIPATTINAM
DIAGRAMMATIC RECONSTRUCTION
OF PHASES OF THE SITES
[SURFACE HUMUS OMITTED]
[SCALE: 1cm.-5m. (Approx)]
WEST
EAST
TO SEMBANARKOIL
BROWN EARTH LAYERS
SAND
EARLY HISTORIC STAGE
(MANIGRAMAM)
OMITTED 0·75KM.
NATURAL SAND
SILT
COMPACT BROWN EARTH
BROWN EARTH
SEVERAL LAYERS
DARK CLAY
PRE-MEDIVAL TO
EARLY MEDIVAL STAGE
(VELLAYANIRUPPU-II)
BUDDHIST BRICK TEMPLE STAGE
(PALLAVANISVARAM)
BUDDHA VIHARA STAGE
(PALLAVANISVARAM)
OMITTED 0·5KM.
EARTH
SILT
CLAY
SAND
WOODEN POLE
WHARF STAGE
(KILAYUR)
BRICK-WHARF
STAGE
BRICK INLET
CHANNEL STAGE
(VANAGIRI)
OMITTED 0·25KM.
BEACH SAND
URN BURIAL
SUBSTRATUM
(VANAGIRI)
SEA LEVEL
KEY MAP
(NOT TO SCALE)
R. KOLLIDAM
URAIYUR
TIRUCHI
THANJAVUR
MANIGRAMAM
SEMBANARKOIL
VELLAYANIRUPPU
MULLAIVAYIL
PALLAVANISVARAM
KILAYUR
ROAD
R. KAVERI
VANAGIRI
BAY OF BENGAL

FIG. 3

the backwaters which separate the beach sand strip hugging the coast. Mullaivayil was at the mouth of this backwater to the north east of Kilayur about a kilometre or two away from it and boats moved from the sea into the backwaters and were berthed in the wharf platform - which itself had two chronological phases of operation about which more will be detailed in the later pages. There was thus a very distinctive compartmentalisation of the triangular estuarine area with the apex somewhere at Melayur and with the fanning out of the original multi-pronged delta stretch comprising Kilayur on the north and Vanagiri and Melaperumpallam to the south, the entire zone having been divided into port area, irrigation tank area and interior area of habitation and cultural activity, reinforced further by the mercantile village of Manigramam slightly further west or the apex village which handled, by its corporate endeavours which had been historically renowned, the trade and commerce of the port zone, for and on behalf of the reigning king under his authorisation and dealt with the coinage and fiscal transactions as well. The nature of the antiquities which everyone of these villages had yielded through the excavations, has a distinctive character, suggesting the co-ordinated activity of the port town, serving as a commercial and cultural clearing house of the kingdom, in relation to other parts of Tamil Nadu coast and by maritime programmes with exotic Rome in the Mediterranean zone of Europe.

The delta tract thus revealed by the excavation in every one of the localities chosen (at random, by the surface evidence of the fragmentary structural remains and pottery and antiquities which had been collected by a systematic exploration programme over some years which preceded the digging) the fluviatile sand at the bottom, silt and dark compact clay above over which cultural strata of compact brownish earth accumulated in the course of the colonisation and settlement - which had already commenced from the top of the silt stage. It was extremely difficult thus to survey and map out the horizon of the ancient remains, prior to the excavations, and one had to be guided, only broadly, by the results of surface explorations and the cultural differential, that had been collected through them. But, in the sequel, it is these four strata beginning from the sand and silt, and followed by heavy clay and habitation layers of compact earth, that revealed stable horizons which could be correlated after the excavations, for making out the continuous story of the port-town; and in that process, had not only helped in the understanding of the methodology of colonisation and settlement, but also a cataclysmal event of the inward transgression of the sea in the early historical times which left its scar on the delta tract and its permanent verbal record in the literary references to the event in several sources of information, epic, religious and social documentation in the period after. This transgression had brought a very heavy clay deposit on the stretch upto which the sea ingressed, beyond which the level of the land had become lower. Subsequently, colonisation was primarily confined to this dark clay horizon and thus revealed that only after a particular chronological stage and point of time that hinterland occupation in certain areas like Vellayan Iruppu, Melayur and Sampapathi Amman temple area commenced. Besides, even in these sites, sunk into the clay level or on the surface, some pottery types belonging to much earlier period, like Black and red ware or black ware, was sporadically seen (apart from being found on the surface layer also), thus confirming

the fact that there had been a gap in the resettlement of certain parts of the hinterland caused by the psychological and physical effect of the cataclysmal event of temporary sea incursion. On the basis of the archaeological evidence and the limited series of occupation of different sites on different morphological horizons like, sand, silt and clay, it could be provisionally concluded that the sea incursion phenomenon took place between the beginning of the fifth and the sixth century A. D. essentially after the *first phase* life of the Buddhist monastery (third-fourth century A.D.), where also, after a break indicated by debris layer, a second glorious phase of a Buddhist brick temple (fig. 2) of large dimensions was erected and seemingly continued on its own and collateral evidence of a bronze (now in Madras Govt. Museum), almost upto the ninth century A. D. It was actually after the eighth-ninth century that the hinterland sites of Vellaiyan Iruppu etc., begun their habitation, with specific data of pottery (both local and exotic) revealing such a stage. Thus, one of the important technical characteristic of the site, as a whole, was that the earliest traces of habitation like urn-burial, datable to third-second century B.C. and continuing for a few centuries (pl. V) took place from the lowest sand level, the wooden pole, first stage (pl. VI) of wharf was almost coeval with this and also on sand, the next brick wharf stage and (elsewhere) the inlet channel of brick stages respectively at Kilaiyur (in the Mangaimadam location and Vanagiri) were begun on the silt horizon; the *Buddha Vihara* site was on the dark compact clay horizon (prior to the sea incursion) and the second stage Buddhist temple of Pallavanesvaram, the Vellaiyan Irrupu and Sambapathi temple sites were beginning in the hinterland for their first occupation level over the clay and answered for the heaviest cultural deposit thickness of nearly two to three metres - whereas in all other earlier sites, cultural deposit was mainly of the order of a metre or a metre and a half maximum. The conjectural schematic reconstruction of this differential primary horizon of first occupation in the various sites had been indicated in a diagramatic cross-section of the land, from Manigramam to the sea, over a stretch of nearly 2 to 2·5 km distance, and the land profile which indicates the sea incursion has also been co-ordinated with this (fig. 3).

The datable pottery from the sites comprise Black and red ware and all-black wares, 'Rouletted' ware and its imitations, 'Kushana' polished red ware in sprinkler types, exotic 'green glazed' pottery (seen here for the first time and dated in the Malaysia - Indonesian archipelago sea as ascribable to the ninth century A. D.), and finally the celadon ware which starts occurring on the Indian and the Chola coast regularly from the ninth-tenth century A.D. upto the twelfth century. Coins like punch-marked coins, early Chola coins with tiger emblem, Raja Raja's coins (profuse in the hinterland site of Vellaiyan Iruppu-II) from the other chronological indices for assessing at the successive stages, the life style of this port town of Puhar.

It is thus for the first time that the continuous story of Tamil culture is documented on archaeological data, *on the ground*, from the third century B.C. to the twelfth century A.D. making the limited excavations a truly outstanding archaeological exercise for the early history and culture of Tamil Nadu.

CHAPTER IV

CUTTINGS AND STRUCTURAL REMAINS

It should be stated, at the outset, that the finds of mutually varied and distinctive categories of antiquities yielded in the surface exploration in the various suburbs which together constituted the erstwhile Kaveripattinam port-city but now having the status only of separate straggling village, have been so promising and providing an overlapping time range that the selection of the possible localities for a probe by laying out horizontal trenches had been facilitated, together of course with the fortuitous and lucky occurrences of structural vestiges in the areas selected, indicated before excavation by chance remnants of brick fragments. The fact that the total thickness of cultural deposit in any of these localities except at Vellayan Iruppu, was never more than a metre or metre and a half had also helped in this process notwithstanding the topographical variation in ground level now, of these locations and the likelihood of only the basal structural parts having survived.

The attenuated Kaveri stream, at this port site, as seen now, was obviously the remanant of the sloppy network of deltaic river of Kaveri in the early historical periods. The subterranean natural soil-profile of the sand and alluvial silt cap has a mild gradient and has a high point in the overlying and reasonably heavily compact clay, at Pallavanesvaram, sloping out seawards and inwards from this point. This was perhaps the erosional profile of the marine incursion legendarily recorded; and as now seen feasible, should have taken place in the fifth-sixth century A.D. and had brought up considerable clay onto this high level zone landwards from the sea. Perhaps whatever was lying on the site of Kilayur to Vanagiri had been ploughed and destroyed by sea erosion and subsequent cultivation and hence the continuous second part of this story from the third century A.D. is to be seen only at Pallavanesvaram and Vellayan Iruppu.

This tends to separate the hinterland sites of Pallavanesvaram, Manigramam and Vellayan Iruppu, on the one hand, and the easterly villages of Vanagiri and Kilaiyur (Mangaimadam site) on the other, from one another in time scale, on either side of the chronological spectrum and physiographical deposit of heavy clay makes the second mentioned group as much earlier to the first - a fact proved by their antiquities and pottery as well - and thus forming the oldest phases of the site and town life. Only in the very oldest phase of the site, namely, the urn-burial-using stage of Vanagiri and Melaperumpallam that there are corresponding and coeval hinterland vestiges of a similar kind also, as at Manigramam. There is no doubt also that sub-aerial cultural and marine agencies and the delta channels of the river Kaveri itself together had left a much undulating topography in many of the localities. This had tended to emphasise further the usefulness of the firm soil horizons variously of the sand, silt, compact clay profiles, for primarily testing the *in situ* cultural deposits where they could be contemporary, as for instance, the Mangaimadam 'wooden pole' wharf stage and Vanagiri

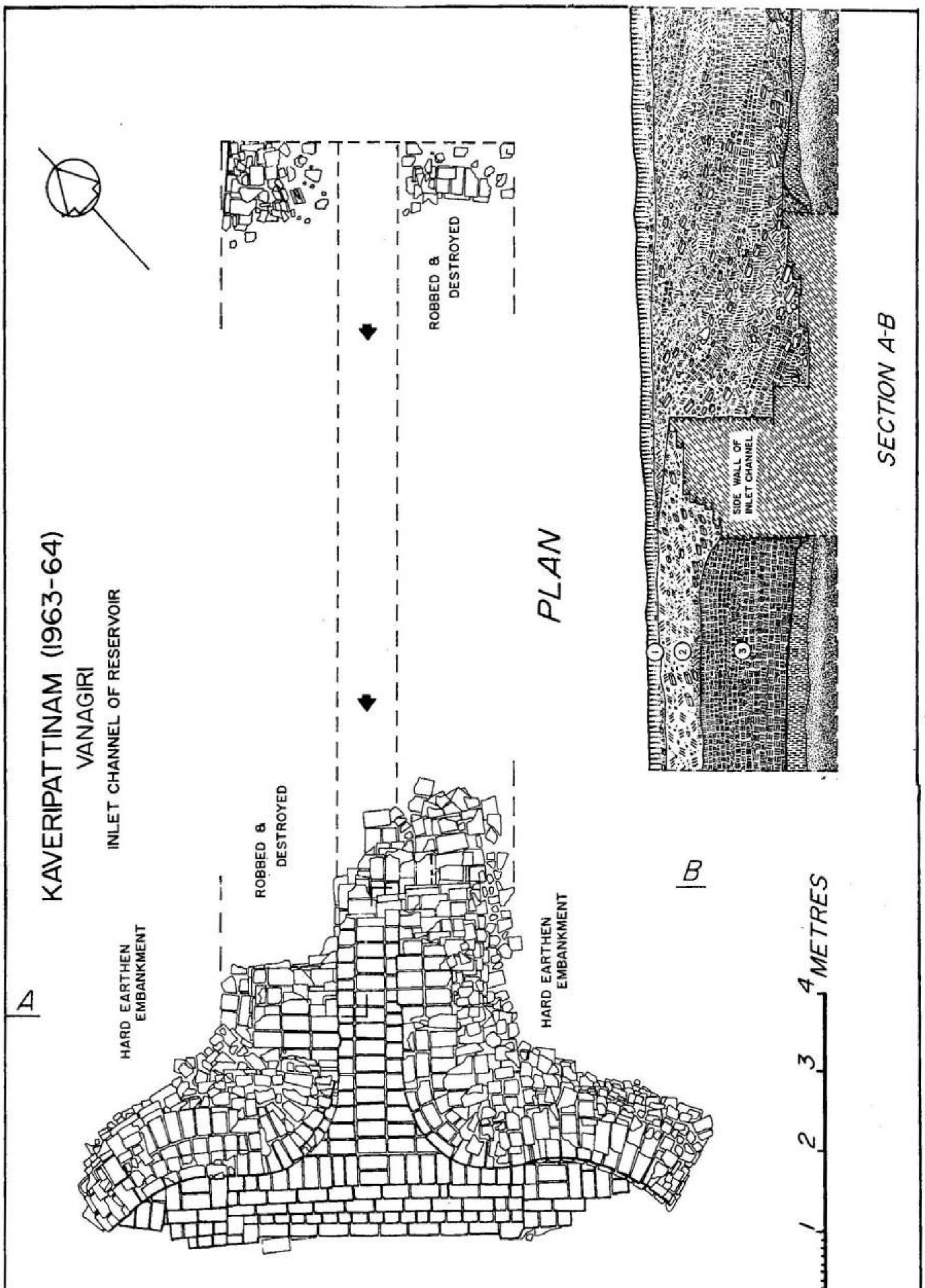

KAVERIPATTINAM (1963-64)
VANAGIRI
INLET CHANNEL OF RESERVOIR
A
HARD EARTHEN EMBANKMENT
ROBBED & DESTROYED
ROBBED & DESTROYED
HARD EARTHEN EMBANKMENT
PLAN
B
0 1 2 3 4 METRES
SIDE WALL OF INLET CHANNEL
1
2
3
SECTION A-B

FIG. 4

urn-burial stage, on the one hand, and again the Mangaimadam brick wharf stage and Vanagiri brick inlet sluice stages (using almost similar bricks) on the other. Hence a break-through has been achieved in this paradigm of the cultural soil now partially under water and its morphological profiles, forming a guide line for the technique of excavation in a deltaic sea port localities of vast perimeter. In this sequel, the horizontal lay out of trenches in the different localities have their stratigraphic inter-relation through the natural soil profile differing in each of these localities. Thus, the natural soil at Vanagiri urn-burial and Mangaimadam, 'wooden pole' wharf stage was *fluviatile sand;* for Vanagiri brick inlet sluice site and Mangaimadam brick wharf platform stage was *alluvial silt;* for Pallavanesvaram Buddhist site was *compact clay,* which last continues to be the natural soil for Vellayan Iruppu also, at which site the very lowest layers had also interestingly yielded early historic ring well and vestigeal black and red ware, followed by *sterile deposit* and a succession of pre-mediaeval and early mediaeval cultural deposits from the ninth century to twelfth century A.D.

Limited horizontal grid trenches were thus laid in the above sites, wherever unencumbered flat ground was afforded on the ground level. The individual characteristics of these sites are now described.

1. VANAGIRI : INLET SLUICE SITE

This site is resting on sloppy ground to the immediate south of which are the villages of Kilaperumpallam and Melapperumpallam, literally meaning the great, eastern and western depression of land (pl. IX A). This would indicate that there had been a low lying area in these two villages (even as the land and its general contours show) formed by earlier Kaveri channel. The massive brick sluice channel with an inlet drop into this depressed land beyond, in the above two villages, has been laid in a roughly south-east strike, seemingly suggesting the natural dip of the land here. The foundational trench for laying the sluice channel was cut into the alluvial silt which was underlain by fluviatile sand (fig. 4). Its part - contemporary layer-was a thin soft silt and clay and mainly compact earth. This site was overladen with compact clay (during the incursion of the sea) and, in due course, brick and earth robbing had taken place in comparatively mediaeval and later times, in which destructive process, a part of the discharge channel of the sluice was luckily preserved for us, including the widening curved mouth and drip courses of brick to prevent erosion. At the far inner end of the channel, one wing of it was vestigeally remaining and the zone in between the two ends of the channel were thus robbed. It is interesting to note that this discharge mouth has the curving flanks, almost exactly similar to the corresponding structure of this type noticed at Nagarjunakonda to the east of the Pushpabhadrasvami temple substructure, leading to the large tank-reservoir (sometimes called 'arena' mistakenly) towards the south and was a clear subterranean discharge channel there for the storm waters from the slope of the Nagarjuna hillock, seeping beyond the premises of the Pushpabhadrasvami temple, under its foundation, and draining into the square brick built reservoir, probably used for berthing boats and provided with a stepped gate like flank on the

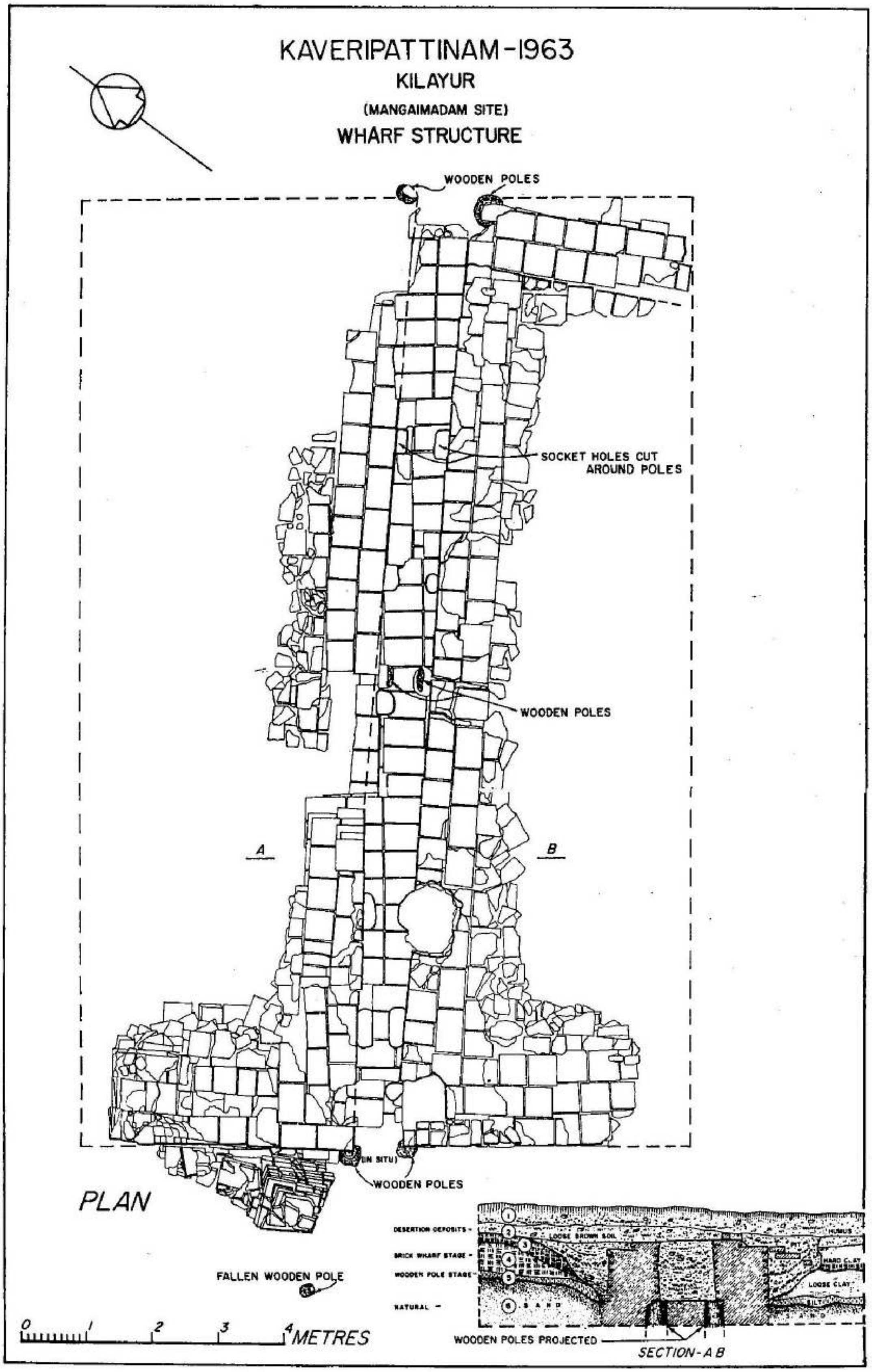

KAVERIPATTINAM-1963
KILAYUR
(MANGAIMADAM SITE)
WHARF STRUCTURE
WOODEN POLES
SOCKET HOLES CUT AROUND POLES
WOODEN POLES
A
B
(IN SITU)
WOODEN POLES
PLAN
FALLEN WOODEN POLE
0 1 2 3 4 METRES
DESERTION DEPOSITS
BRICK WHARF STAGE
WOODEN POLE STAGE
NATURAL
LOOSE BROWN SOIL
HUMUS
PIT
HARD CLAY
LOOSE CLAY
SILT
SAND
WOODEN POLES PROJECTED
SECTION-A B

FIG 5.

discharge side of the reservoir, as well as on the other sides. Its date is that of the second-third century A.D. and is of a comparable date and constructional usage with Kaveripattinam—Vanagiri inlet sluice. The bricks used being of large and heavy size (42 × 24 × 10 cm) are almost the same used in the wharf site as well as at Pallavaneswaram Vihara site later. Farther ahead in the northern India, these bricks compare also with those used in the massive tank at Sringaverapura and dated there to first century A.D. and of Kushana date. By the mediaeval and modern periods, so much clay and earth deposit had covered the structure in bands that the structure was found embedded two metres below the undulating modern ground level, sloping though it was from north to south. It corroborated the originality of the early Chola irrigational programmes of the legendary Karikala times, and is thus a valuable vestigeal discovery. The dimensions of the sluice channel are nearly 24 m length north-south and 8 m width, with the central channel itself of 83 cm width and standing where preserved to a maximum of over 1·5 m height. The massive individual brick sizes are the products of that age. The channel was given a mild gradient and bricks were transversely laid on the floor and longitudinally on the wall for bonding (pl. IX B).

An interesting feature of the technique of construction was also that for the curved terminal part which looks like a half-bastion (pl. X), the core had been laid in radial arrangement of bricks, though radial or rhomboidal bricks are not to be found but only of rectangular kind. The curve was achieved in concentric lay out of courses by a fine improvisation of the laying technique. The site virtually forms the southern periphery of the port-town. The drip-ledge courses for preventing scouring at the discharge point have been organised on the frontal and lateral part of the discharge end.

2. KILAYUR : WHARF SITE

This site is part of the revenue limit of Kilayur village and is located more than a furlong inside from the present road leading to the beach sand, to the north of the Kaveri stream. Trenches were laid in a grid in the area where brick bats clusters were noticed, amidst cultivated land. The excavated 'wharf' platform (18·28 × 7·62 m) in its strike was north-east - south-west discovered below the then current monsoon water level. Perhaps it indicated the prevailing wind direction in the back-waters.

The structural remains have comprised, in two stages, a provision for berthing boats in high tide. The brick platform or quay was having a channel of basal courses flanked by the high platform or pier (pl. VII). The overall height of the platform was 1·71 m. The channel was indeed intended to cut the impact of the breakers by allowing water to flow through the channel gap (pl. VIII A). It would seem that there had at least been two stages of erection of the wharf arrangement here. The earlier stage was organised exclusively by a series of rows of four strong poles in each line (pl. VIII B and C) approximately 15 cm diameter, of hard wood and tall character which was driven down firmly into the river sand for at least a couple of metres and should have in original state rising atleast a couple of metres above the then high tide level, so that it may serve as a boat-jetty, perhaps also provided additionally with cross planks of wood tied to the poles, for loading and unloading of merchandise.

The C^{14} datings of these poles had been separately noted elsewhere in this Report (Appendix II). These determination TF 207 yielded dates of 2200 ± 100 (2265± 100), thus in absolute chronological terms, approximately between 300 B.C. and 200 B.C. - an average of 250 B.C. These

were associated, at the lowest sand level top, with Black and red ware as the pottery of this Period I of the site, although Black and red ware was seen continuing into the next stage (first century A.D.) as well and further associated with 'Rouletted' ware at that stage. In that second stage, the jetty of poles was reprovided with the *pucca* brick platform enclosing a basal channel in between and since the poles were *already in position and in continuing use,* the bricks immediately adjacent to the lay-out of the poles were cut out along their edges, to accommodate the diameter of the pole. This feature, seen consistently, furnished the additional precious evidence thus, of the poles being *earlier* than the brick wharf platform stage - which is also otherwise corroborated by the stratigraphy (fig. 5) and confirmed that the C^{14} determinations are referring *only* to the wooden poles of the earlier jetty stage which was clearly anterior by atleast more than a couple of centuries to the brick wharf platform stage which came up only in the first century A.D. The brick wharf itself had a further lease of life upto the second century A.D. or even slightly later, and seemingly went out of use thereafter and there are sealing layers of top debris and clayey silt and humus. This site is water-bound in the rainy season and in other dry seasons, a crop of paddy is raised by the owner conveniently. Even the excavation had to be carried out only in the dry season when the water table was lower, though even at that time the foundational strata (of phase I of the wharf) was liable to be under water. The bricks of the wharf measured 61 × 40·5 × 7·7 cm on an average and in their sizes and manufacture were somewhat different from those of the Vanagiri inlet sluice bricks (which measured 40 × 26 × 10 cm and thus being nearer to Buddha Vihara site bricks - 42 × 24 × 10 cm). The inlet sluice was broadly of the same age as the brick wharf stage but heavier bricks had been used there than in the inlet sluice, as the latter was in a reservoir and not in the backwaters.

The double platform wharf with a channel in between should have risen much higher when fairly intact suiting the high tide level of the lagoon anciently. The bricks were laid in lime/sand mortar and despite the vicissitudes of time had yet retained their compactness though they had suffered a slight tilt sideways by water action. It is also possible that this wharf was close to the high tide bank but in water, and thus the present Kilayur village should be linked, along the bank of this backwaters, to Neidavasal further north-east, as the coastal configuration and pottery finds from Neidavasal even now show. We do not know if such a wharf arrangement was repeated at certain other points also - which only future explorations and discoveries may reveal.

The trenches around the wharf did not yield any extension, except stratigraphic corollary to the site.

3. PALLAVANESVARAM : BUDDHIST TEMPLE SITE

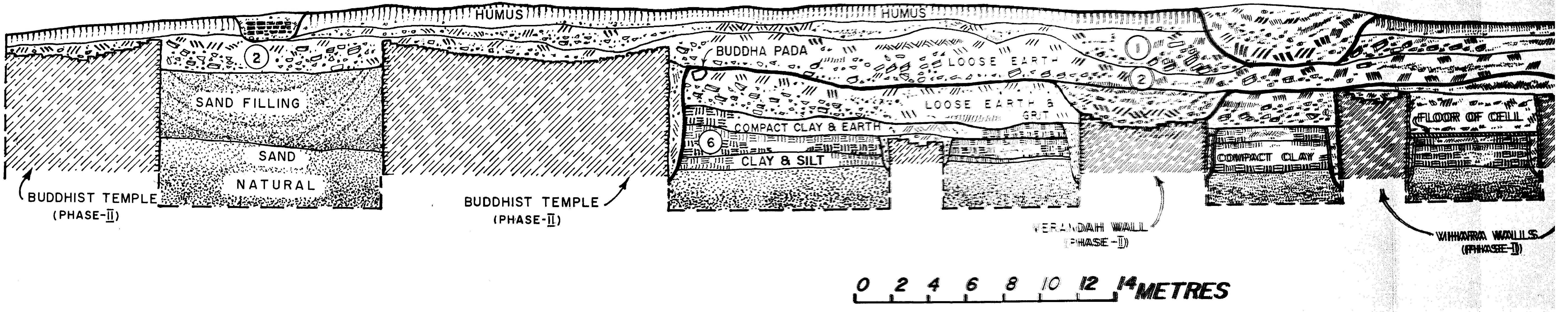
This site, as already stated, had not been directly affected by any sea incursion and revealed half a metre below its modern level, the remnants of a monastic lay out, which was itself in two stages, with a partial disruption of religious life between the two. Perhaps the major incursion of the sea had affected the activity cycle and resumption of activity was possible after the restoration of civic life. It was then provided with a new phase of construction, not overlapping with the Vihara site but to the south of it, in the form of a Buddhist brick temple of some significant dimensions and in a unique tradition of construction, datable to around the sixth century A.D. or after.

KAVERIPATTINAM, 1963-73

PALLAVANISVARAM

SECTION ACROSS BUDDHIST COMPLEX (PHASE I & II)

(LOOKING EAST)



Before proceeding further, we should narrate the lay out of the Buddhist monastery which was located in one main wing and some ruined ancillary attachments in the interior to the north of the later Buddhist temple and both these were north of the present road going towards the sea coast. The organisation was that of a Vihara a total of nine cells in a row (each measuring approximately 3·10 × 2·40 cm) and provided with a common verandah at a distance of 2·25 m from the cells and extant for a stretch of 33·5 m and of 3·9 m width. The general strike of the Vihara was slightly east-south-east west-north-west. There was provision for drainage of waste water which moved through a drain under the monastic unit towards the north, across the western-most part of the Vihara cells. The extant courses stand upto a metre or more and the size of the bricks was 42 × 24 × 10 cm (average). The cultural deposit as seen now was hardly half a metre or more, comprising over the compact clay, a hardened earth, a loose earth and debris layer which was sealing layer (fig. 6) ending the life activity of the Vihara, followed by a top layer capping it all. It is to be noted here that there was a *Buddhapada* (pl. XIV) and a small bronze icon of Buddha in *bhumisparasa mudra*, found away from it to the south and from within the monastic cell area respectively. The former was tilted upside down at the time of discovery showing thereby evidence of disruption of life and desertion of the site temporarily. The associated pottery was devoid of Black and red ware but with polished red ware, datable to around the third-fourth century A.D.The *Buddhapada* was of Palnad limestone and showed a small receptacle cut between the long toes of the feet and intended for the relic offerings of bone fragments and gold flowers which were customarily deposited in it, related to the acharya or the Buddha as the case may be, which it venerated. While Nagarjunakonda *Bhuddhapada* (*Ancient India*, no. 16, p. 69 thereof) did not contain the receptacle socket and as otherwise datable to third century A.D. by its inscriptions, this Kaveripattinam *Buddhapada* which is also seemingly of the *Theravada* school had the receptacle. It is otherwise more comprehensive than the Nagarjuanakonda example in its showing besides the auspicious symbols, the main events of Buddha's life in frieze work on the four side faces of the slab, together with *Chaitya* worship representing *mahaparinirvana* on the flat top flank of the *Buddhapada*. It should, however, be datable to a slightly later period perhaps the third-fourth century A.D.

The other miniature Buddha image in bronze (see also description under antiquities) is an important find, as it reveals a stage when Buddha was worshipped as an image and should be datable to the fifth century A.D. It was found in a debris pit within the monastic premises and belonged to the desertion phase of monastic life. The monastery which provided only for nine cells in a row for monks and a ruined ancillary single room structure to the south perhaps for the prefect of the monastery, went into disuse around the fifth century A.D. perhaps due to the event of the incursion of the sea and activity was resumed after a break only in the sixth century A.D. probably when the large and intricate brick temple for Buddha was erected farther south on the adjacent area, (figs. 2 and 7). The nature of this latter structure itself, together with its massiveness and elaborate layout would reveal that change into the typical late *Mahayana* edifices which enshrined Buddha in a regular image. It is noteworthy of mention here that the gilded bronze Maitreya (future Buddha) of Madras

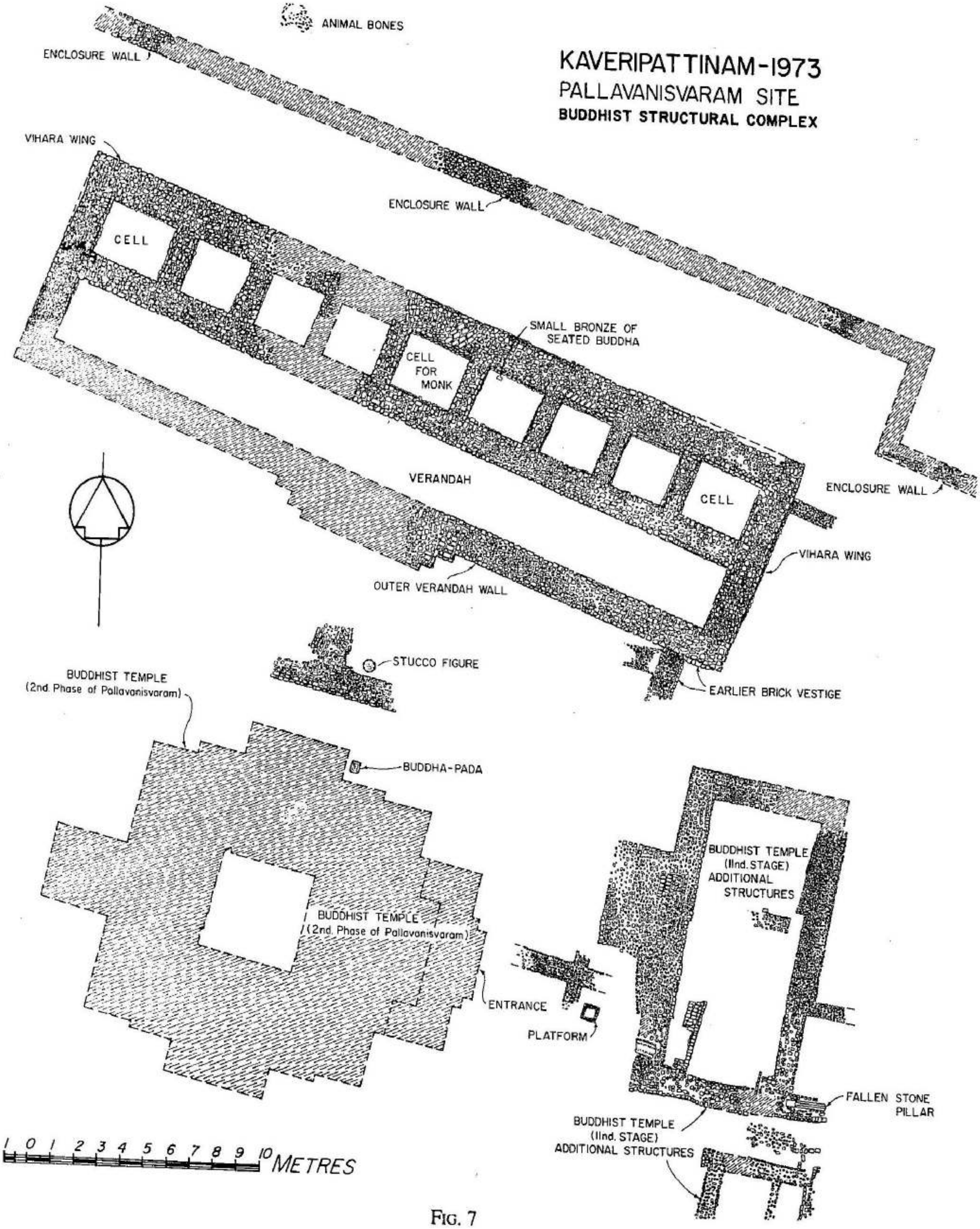

ANIMAL BONES
ENCLOSURE WALL
KAVERIPATTINAM-1973
PALLAVANISVARAM SITE
BUDDHIST STRUCTURAL COMPLEX
VIHARA WING
ENCLOSURE WALL
CELL
SMALL BRONZE OF SEATED BUDDHA
CELL FOR MONK
VERANDAH
CELL
ENCLOSURE WALL
VIHARA WING
OUTER VERANDAH WALL
STUCCO FIGURE
BUDDHIST TEMPLE
(2nd. Phase of Pallavanisvaram)
EARLIER BRICK VESTIGE
BUDDHA-PADA
BUDDHIST TEMPLE
(IInd. STAGE)
ADDITIONAL STRUCTURES
BUDDHIST TEMPLE
(2nd. Phase of Pallavanisvaram)
ENTRANCE
PLATFORM
FALLEN STONE PILLAR
BUDDHIST TEMPLE
(IInd. STAGE)
ADDITIONAL STRUCTURES
1 0 1 2 3 4 5 6 7 8 9 10 METRES

FIG. 7

Govt. Museum and dated generally to the eighth or early ninth century A.D. had been collected from this site of Pallavaneswaram in the past, long before it was excavated in the year 1963-64, and would tend to show that the second phase activity of Buddhist monastic life in the form of the brick temple of *pancharatha* plan was continuing till the eighth-ninth century A.D. which is well borne out by the stone pillar fragment in the eastern adjunct part of this Buddhist temple, in fine granite workmanship, carrying also some numerals of Tamil which can be dated to this same period. It is perhaps at this first phase, Buddhist monastery that Buddhadatta might have stayed to write his work *Abhidhammavatara*. The closing of Buddhist activity to this place should be taken as almost coeval with the rise of Saivism and Sambandar saint's hymnals of 'Kaverippumpattinattu Pallavanesvaram' temple, sometime in the seventh-eighth century A.D.

This second stage Buddhist temple, begun in the sixth-seventh century A.D., was an outstanding creation for its period and region. Though mainly the foundation ground floor pattern of the structure is preserved, it speaks volumes about the techniques of construction in brick which the Chola artisans were great adepts in. The rectangular or 'L' shaped as well as the small square voids in the foundation, together with the large central squarish void, would seem to suggest that the structure stood in more than one storey height and perhaps the shrine was erected by a astylar corbelling principle with staircases suggested by 'L'- shaped voids leading to the upper floor from all the three sides except the east, towards which it was obviously facing. The sanctum was again perhaps in the spot of the central large square void, after it had been spanned by corbelling from four sides into a pyramidal top and with floor of the sanctum, maintained at the upper storey level, and was approached from the side corridors by flights of steps. While from other points of the corridor on three sides, double staircases lead to the upper floor level. There were only columns and no staircase on the eastern side.

Earlier, it was thought that this site may be a stupa site, ancillary to the monastery. But both stratigraphy and the historical late Mahayana situations were negating this possibility. The site, as we know now, represented the second stage of Buddhist activity here which extended almost upto the end of the eighth century A.D. At that stage, the very erection of any stupa had become long obsolete, both ceremonially and ritually, and regular worship of the Buddha, the *Bodhisattvas* like Avalokitesvara, Padmapani, Maitreya and others had become common all over India and the images were of brick and stucco for the main figure in the sanctum and bronze images for the portable ancillaries. Further, Buddhist temples (in brick at this stage here) had been built in more than one storey and staircases leading to the upper were thus needed and perhaps designed here duly. '*Kutagara*' as well as barrel vaults were seemingly common for the main shrines. The former was for square shrines, to which the present case should belong. The technique of building would thus be by a astylar corbel principle and raising of the floors by the *varimana* grid scheme in wood and brick which as we know, was fundamental to the storeyed southern *vimana* order. Thus, though we are unable to confirm the exact nature of this Buddhist temple, a conjectural projection of what it could have, as admissible, looked like, may be proposed (figs. 8-9).

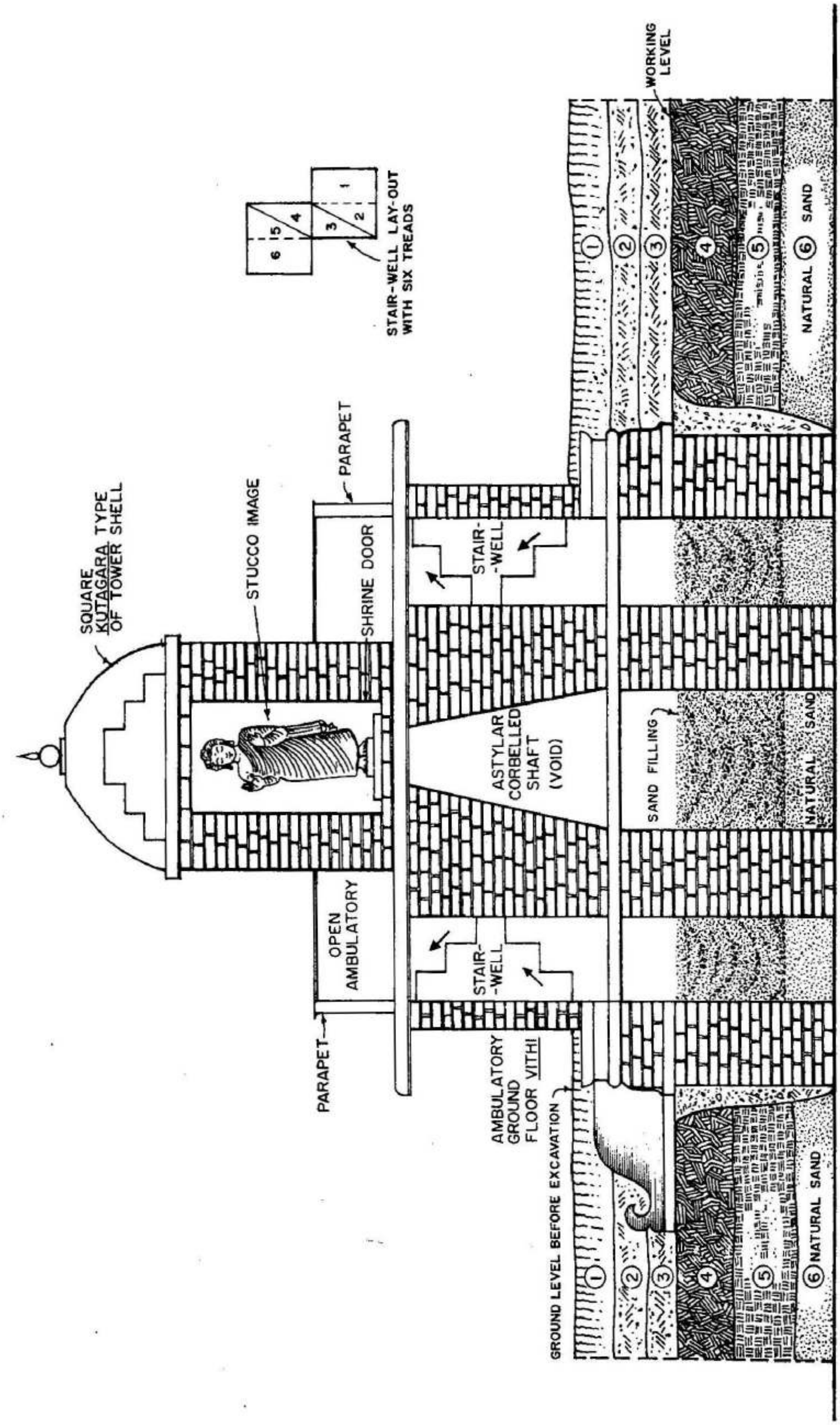

SQUARE
KUTAGARA TYPE
OF TOWER SHELL
STUCCO IMAGE
SHRINE DOOR
PARAPET
OPEN
AMBULATORY
PARAPET
STAIR-WELL LAY-OUT
WITH SIX TREADS
WORKING
LEVEL
STAIR-
-WELL
STAIR-
-WELL
ASTYLAR
CORBELLED
SHAFT
(VOID)
SAND FILLING
NATURAL SAND
NATURAL SAND
AMBULATORY
GROUND
FLOOR VITHI
GROUND LEVEL BEFORE EXCAVATION
NATURAL SAND

FIG. 8

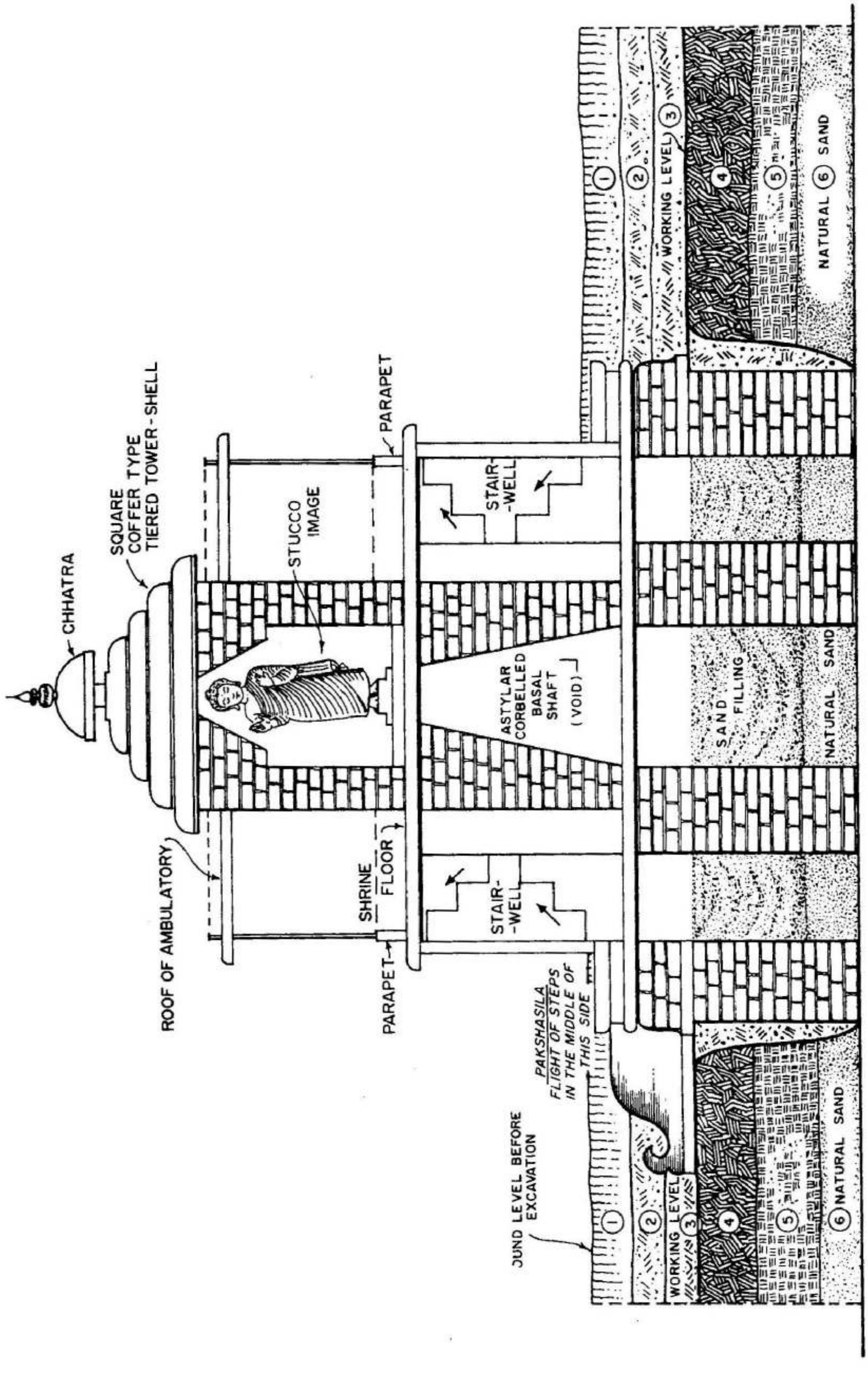

CHHATRA
SQUARE COFFER TYPE TIERED TOWER-SHELL
STUCCO IMAGE
PARAPET
STAIR-WELL
ASTYLAR CORBELLED BASAL SHAFT (VOID)
SAND FILLING
NATURAL SAND
ROOF OF AMBULATORY
SHRINE FLOOR
PARAPET
STAIR-WELL
PAKSHASILA
FLIGHT OF STEPS IN THE MIDDLE OF THIS SIDE
UND LEVEL BEFORE EXCAVATION
WORKING LEVEL
NATURAL SAND
NATURAL SAND

Fig. 9

As narrated elsewhere (Historical background and Appendix I) there was *primafacie* difficulty in the examination of the delta site of Kaveripattinam since both physiomorphological and occupational features were mingled in it and the subsequent diversity of land use in more modern times after the mediaeval periods, made it more difficult to traverse and survey the land. Hardly any open stretch of a high level mound-like area is to be seen and most of the land was privately owned, either as part of the home-stead or farm-stead, or cultivated land with standing paddy crop. Indeed, the archaeological excavation and exploratory survey in such an estuarine tract was fraught with several problems and only clues, relatable to the particular revenue village limits in which they are found today, are the chief basis for proceeding further in the understanding of the exact topographical lay out of the erstwhile port town site. Discrete villages, with optimum cultivation and farmyard activities also made physical exploration cumbersome. All the same, proceeding from the known to the unknown, the occurrence of urn burial sites in the coastal littoral (virtually from Kumari cape to the entire coast of Tamil Nadu, at various locations), of which a volume of information, study and research and a few excavations, have already been made, as at Vanagiri, Manigramam and Kilaperumpallam village limits, was the first starting point. Occurrence of some spots with brick fragments on the surface of rather larger sizes than the present, caused by the relatively thin mantle of humus and cultivated soil, had also simultaneously been helpful, as in the case of the wharf site, Pallavaneswaram *Buddha Vihara* site and the Vanagiri inlet sluice site (the last caused by surface erosion). The land profile in this delta stretch was naturally of a gradually rising gradient from the sea level towards the west inwards and it has been seen that, but for the special feature to be noted further, the gradient was virtually about a metre height over a stretch of nearly three kilometres. On the other hand, the stretch covered nearly four villages, respectively Kilayur and Vanagiri, to the north and south of the easternmost part of the estuary, and further west Melayur (comprising Pallavanesvaram earlier belonging to Sayakkadu - and Vellayan Iruppu to the north of the river, and Kilaperumpallam and Melaperumpallam to the south and finally Manigramam to the north, at a point immediately west of which the attenuated Kaveri stream swings slightly southwards and the road to the coast crosses it near the village of Sembanarkoil. Since each one of these sites, excluding the Kila and Melaperumpallam which had not yet been subjected to the spade, had on excavation yielded significant discoveries which form the subject matter of this Report, their subsoil configuration was of importance forming the physiographic matrix upon which the first occupation in each of these commenced. Thus we find that Vanagiri urn burial site and coeval Kilayur 'wooden pole' wharf stage belong not only to the earliest settlement but also were begun right on the sandy soil. Subsequent brick wharf stage of Kilayur and inlet channel stage were on the silt horizon over the sand and the mantle of dark compact clay horizon formed the settlement for the Pallavanesvaram *Buddha Vihara* site. It is to be noted here that at Vellayan Iruppu which is essentially a pre-mediaeval and early mediaeval site from approximately ninth century A.D. to the twelfth century A.D., the lowest matrix of this dark clay did yield some Black and red ware which did not tie up with the subsequent pre-mediaevel layers but was distinctive from it, and could have come on it *only* by the water-laden movements of the earlier culture pottery from sites further east. The heaviest deposits at Vellayan

Iruppu, (in Melayur village limits-II) almost upto two metres or more thick (pl. XV C) would show that there was a fall in land level at the time of the deposition of the dark clay which again reaches its heaviest accumulation in the Pallavanesvaram area (also of Melayur); and the gradient of land itself drops to a mean level until past Manigramam (where it is only less than a metre thick)) and virtually maintains this even level all along the west almost upto Thanjavur from where the coastal plateau rises. Thus, we find the differential swing of habitation upto about the end of the seventh century A.D. in this port city, which blooms in its hinterland from that time, under the rise of the Imperial Cholas of Thanjavur, as attested to by the rich variety of antiquities and pottery-bearing starta of Vellayan Iruppu-II. It should also be noted that the southern side of Kaveri, all the way from Vellayan Iruppu-II has a significant drop and is notable in the villages of Mela-and Kila perumpallam and Vanagiri nearer to the beach. This also explains the crucial position of Vanagiri where the brick-built inlet channel for a tank had been discovered in the excavations, belonging to the opening centuries of the Christian era, to receive the surplus monsoon water, seemingly from the Kaveri for the dry season.

Although the discoveries of all these sites had been accidental and through the clues of pottery, variously Black and red ware and 'Rouletted' ware and early coins of the Cholas etc., still, the framework of *inter-related chronology of the sites, from east to west,* is manifestly prominent, indicating the swing in the occupation and interlocking of the evidentiary data among the sites excavated. With this framework, further concerted excavation to reveal more of the structural and cultural continuity could be easier, but it is the present excavated sites that had laid the pattern for undertaking the physiomorphic and cultural processes that play in the Port town of Kaveripattinam, and mark it as archetypal, for its class of sites.

Explorations had been first carried out in the year 1961-62 (*IAR 1961-62,* pp. 26-27) by K.V. Raman on behalf of the Southern Circle of the Archaeological Survey of India in the Kaveri basin (see also Appendix I). This revealed early historic sites all along the beach from Neidavasal to Vanagiri in the south, over a stretch of about 8 km crossing through the entire Kaveripattinam zone. All these places had been mentioned already in the Tamil classical literature. Apart from Black and red ware, 'Rouletted' ware, a variety of beads of semi precious stones like jasper, chalcedony, agate and carnelian (*IAR 1961-62,* pl. XLIV A) were collected. Important was also the rare square copper coin from Vanagiri belonging to the early Cholas, besides a few more from Neidavasal (*supra.* pls. XLIV B and XLV A). These show standing tiger with uplifted tail on one side and an elephant on the other side, one of which shows the fish instead of the elephant. A Roman coin of copper (*supra,* pl. XLV B) from Vellayan Iruppu-I was also important, although its exact relationship to the site has not been clear from literary classics of Silappadikaram, although these works refer to the existence of a settlement, of Yavanas (Romans and Greeks) at Kaveripattinam. About 200 m west of the sea, in an open field in the limits of Kilayur village, a huge brick structure over 3 m in width, built of bricks of large and heavy sizes (61 × 40·5 × 7·7 cm) was found about 1·2 m below the present ground level, in the locality known as Mangaimadam. Other early and mediaeval habitation sites in proximity of

Kaveripattinam were noted including Kilayur, Melayur, Sayavanam,, Pallavaneswaram, Vellayan Iruppu, Melaperumpallam, Kilaperumpallam, Manigramam, etc. Many of these yielded 'megalithic' Black and red ware associated with urn-burials here and bright red polished ware. 'Rouletted' ware of the typical as well as a rather inferior variety was also found at Manigramam—a site mentioned in later Tamil inscriptions as a suburb of Kaveripattinam where a great merchant-guild flourished. Meidaeval Chola copper coins were recovered from some of these sites. From Saykkadu (or Sayavanam which had been mentioned in the *Devaram* hymns as 'Saykkattu- Pallavanisvaram', linking these two as related localities) were found irregular shaped coins with standing figures in the obverse and a *linga* on the reverse seemingly of pre-mediaeval to mediaeval times. Terracotta figurines of single modelled as well as double-mould (belonging to the class seen in the Satavahana and Ikshvaku sites of Amaravati, Nagarjunakonda, Kondapur etc., were also picked up. Urn-burial sites were located at Kilaperumpallam, Manigramam, Viramettiruppu and Vanagiri.

In 1962-63, under S. R. Rao, assisted by K.V. Raman brief excavations were conducted at Kilayur and Vellayan Iruppu-I. At the former place, massive brick platform (18·28 × 7·62 m was brought to light. In one of the corner remnants, two wooden posts seen planted close to the brick work were also noticed. The structure was built over the natural sand in the case of the poles, and on the overlying silt and sand below in the case of the brick platform. The size of the bricks used conformed to that used at Nagarjunakonda during the Ikshvaku period. Megalithic Black and red ware was found in the contemporary deposits. A more detailed account of the wharf site for anchoring boats, has already been given earlier.

In the Vellayan Iruppu site, excavation exposed 1·21 m deep stratum (fig. 10) belonging to the early mediaeval period (ninth-twelfth century A.D.) Fragmentary brick walls and platforms were laid bare suggesting four phases of disturbed structural activity (pl. XVI). Copper coins of Raja Raja in the middle two phases of structures suggest their being ascribable to tenth-eleventh century A.D. Among the interesting antiquities unearthed were the royal heads in typical Chola art style, a terracotta pedestal for image and a torso of a dancing lady *(IAR,* pl. XLI A).

Subsequently, in 1963-64 and 1964-65, S. R. Rao, assisted by K. V. Raman, continued the exacavations at Kaveripattinam when the outstanding discovery of a *Buddha Vihara* was exposed at Pallavanesvaram site, comprising nine square rooms (3·5 m square) with a common verandah, and laid roughly in the south-east to north-west direction. The walls were built of large sized bricks (42 × 24 × 10 cm) and were 1·7 wide. A subsidiary structure only partially preserved had a number of offsets of *tri-ratha* layout, generally seen on the front entrance end of an apsidal Buddhist Chaitya. These were later seen to be the offsets of the entrance steps of the Verandah wall. The walls appear to have been originally decorated with moulded bricks also and with stucco ornamentation, which carried traces of paintings on them. A small bronze figure (pl. XV A) of Buddha in *dhyana* pose and a broken terracotta figurine of a goddess was also found at this site related to the stage of debris after the life time of the Vihara. Close to the subsidiary structure mentioned above, to its south, was a slab of limestone bearing the *Buddhapada* and sacred symbols like *purnaghata, svastika, srivatsa*

(triratna) etc. The material namely/mainly greenish limestone and decorative style show an unmistakable identity with the Buddhist art of the Andhradesa as seen at Amaravati and Nagarjunakonda. Adjacent to this discovery and at the same level but in debris condition was a beautiful stucco head. The Vihara was taken by the excavators as datable to the fourth-sixth century A.D. with reconstructions in a later phase. The discovery of Buddhist monastery confirmed the literary evidence found in the Tamil Epics like *Silappadikaram* and *Manimekalai* closely connected with Kaveripattinam, where its having been a centre of Buddhist faith is recorded. Other antiquities from the site included square copper coins of the early Cholas. Rouletted ware, megalithic Black and red ware all taken as assignable within the first four centuries of the Christian era, it could however be noted, were not yielded by actual excavations here.

It may be advantageous to recall at this stage the evidence brought out at Uraiyur, the early capital of the early Cholas when Kaveripattinam was the chief port town. This excavation conducted by the University of Madras, under T.R. Mahalingam, Professor and Head of the Departments of Archaeology, revealed 3 to 3·65 m thick deposits, belonging to three broad cultural periods, namely Period I (third-second century B.C. - first century A.D.) dominated by Black and red ware, russet coated ware, Rouletted and Arretine wares, besides all-Black and plain red wares. Some pot sherds also carried Tamil inscribed legends, one of them reading *'Mupponpedu Andan ninru man (dan),* meaning Andan of Mupponpedu died standing, i.e., fighting in a battle field, datable to first-second century A.D. Such inscribed pottery had also been found at Arikamedu Period II (second century A.D.-fifth-sixth century A.D.). The latter was marked by a gradual disuse of Black and red ware and other plain wares of the earlier period and the emergence of the red-slipped ware and also an interesting brick cistern like series of structures measuring 0·6 m square and 0·35 × 0·8 m square variously. These were, on the analogy of Arikamedu, industrially used as dyeing vats, as Uraiyur was famous from early times till the modern, for its textiles. In this period evidence of floods and water-logging by a thin deposit of clay and sand had been noticed around the fifth century according to an excavator, and Period III was only of unslipped and inferior pottery. It is tempting to link the occurrence of the floods in the fifth century A.D. level with the corresponding presumed legendary occurrence of the incursion of the sea at Kaveripattinam, which might have caused large scale flood in the immediate upstream stretch of Kaveri also. If so, there is a related evidence from Uraiyur also.

Subsequently in 1963-64, explorations and excavations were conducted at Kaveripattinam, during which the inlet sluice structure at Vanagiri was exposed. This area had been, owing to its depression towards the south, subjected to erosion and despite its sporadic cultivation now, resulted in exposing some brick remains. On excavation, it revealed itself as a partially destroyed (anciently by water action as well as by subsequent brick-robbing) well built inlet channel and sluice for filling a reservoir to its south. It was found exposed to about 13 m stretch in preservation though fragmentarily, the central stretch having been fully robbed out. At its mouth it was nearly eight metres wide and curved out smoothly on the either side-wall of the channel, with its floor carefully laid in four courses of bricks in depth which, towards the terminal point of its inlet, was of a stepped nature

comprising four steps and extending to the extreme width of its mouth gradually in these steps, and was intended to break the possible water erosion when it flows into the reservoir in the monsoon season. Such stepped mouths had been noticed anciently, both at Nagarjunakonda in the area adjacent to the Pushpabhadrasvami temple on the river *ghat-* this example been almost closely comparable in its lay out to the Vanagiri structure - and also at Sringaverapura, in the great tanks of elaborate features built a little away from the northern bank of river Ganga on which the main mound stands. It is also seen, even earlier still, at Lothal, in the inlet channel of the Dockyard at its western end, and was intended for a purpose of avoiding water erosion. All these cases were of brick built nature. The bricks used at Vanagiri were of $0{\cdot}4 \times 0{\cdot}26 \times 0{\cdot}1$ m dimensions which compare very favourably with the *Buddha Vihara* site bricks but very slightly lesser in dimensions to that of the Kilayur wharf site. The highest level of the channel bank, where preserved to the maximum, was more than a metre in height and the width of the channel wall was just less than 0·5 m. It is interesting also to note here that in all the three cases of Kilayur, Vanagiri and Pallavanesvaram (Buddha Vihara site), the orientation of the structure was north-east to south-west thereby suggesting not only that this might be due not only to the prevailing wind direction, but also on account of a continuing tradition in the orientation of structures, spread over nearly three-four centuries. Vanagiri inlet sluice site yielded rich Black and red ware, 'Rouletted' ware and other early plain ware, excluding the red polished ware. These enable it to be datable as coeval with the wharf site and slightly older than the Pallavanesvaram *(Buddha Vihara).*

It is also significant, in this connection, that the Vellayan Iruppu-II and Sambapati Amman temple sites excavated in 1972-73 had shown brick structures whose orientation had become changed to nearly due east-west and north-south. This change had seemingly taken place during the second stage of the Buddhist temple site at Pallavanesvaram where not only brick sizes become smaller and totally different from the Buddha Vihara site bricks (which are comparable more to Vanagiri site and wharf site), but also the orientation of the Buddhist temple stretch is again following the cardinal directions. We are thus witnessing a sea-change, not only archaeologically but also sociologically, from the sixth-seventh century A.D. when elsewhere a very large number of brick temples were perhaps getting constructed in the Kaveri valley by the Cholas and which, by ritual orientation and general standardization of orientation from that period for religious and secular structures, changes into the cardinal directions. This also becomes a valuable clue to the chronological fixation of the early phase, virtually ending with the fifth century A.D. or thereabouts, and the later pre-mediaeval phase beginning from the Buddhist temple and continuing well into the mediaeval times. One cannot tell whether this change in orientation also had any bearing upon the phase of the legendary sea incursion which seemingly occurred in between.

During the season 1965-66, Krishna deva, assisted by K. V. Kaman, continued the earlier (1964-65) monastic wing excavation at Melayur in the Pallavanesvaram site, and the full wing, comprising nine oblong cells in all in a row, each measuring $3{\cdot}10$ m $\times$ $2{\cdot}40$ m were exposed (pls. XI-XII). To the southern side of this wing, at a distance of 2·25 m the long verandah wall $33{\cdot}50 \times 3{\cdot}90$m

was also exposed. At a central point, a number of offset vestiges found in this wall perhaps indicated the presence of the entrance into the monastic wing. On the northern side, a long compound wall was also laid bare but a at slightly later phase. Outside this wall, a small but interesting circular brick remains (pl. XIII; fig. 7) containing the skull, jaw and ribs of animal of the bovine species, was found (see Appendix III also). A few indistinct copper coins, painted stucco fragments and terracotta images of pre-and early mediaeval times, were also recovered during this excavation.

In the season of 1972-73, the earlier excavation of 1963-65 in the *Buddha Vihara* at Pallavanesvaram yielding a Buddha image and a *Buddhapada* was resumed by K. V. Soundara Rajan. After acquiring and demolishing the present day adjacent houses, the area to the south of the Vihara wing was taken up to trace other structural remains of the monastic complex, if any, here. To the south of the monastic wing already excavated, a huge structural plinth was exposed in baked brick of a size different from that of the Vihara (pl. XV B) rising to a total height of 1·95 m, from the level of the fluviatile sand layer, but not laid on it but on the top of compact earth layer (4). It was a broad square, laid in *pancharatha* scheme with the *bhadra* having some entrance remains on the eastern side. There were also other vestiges further to the east, in massive foundational walls containing a large chamber. Moulded bricks had been used for the main structure earlier referred to. This Buddhist temple structure was clearly later stratigraphically to the Vihara wing phase and was also different in the orientation of its walls from that of the Vihara, and may be dated to the sixth-seventh century A.D. which was also indicated by the Tamil numerals found on a solitary stone pillar exposed on the further eastern side structure mentioned above, and of the same level. The superstructure might have simulated such a brick built erection ruins seen at Nagapattinam.* A detailed description of its plan and possible superstructural elevations may be seen elsewhere in this Report.

The brick structure, exposed to the east of this temple and to the south east of the Vihara wing was in fourteen courses, having a projecting platform in the middle of the western wall and seems to be a large hall, contemporary with the temple. Not many antiquities were recoverable from these excavations, the noteworthy being a few terracotta figurines, a stucco *yali* and a few stucco fragments (see section on antiquities for their details). In the next season, also by the present author, further probe into these remains yielded apart from other antiquities, a fragment of a painted sherd, depicting a hand holding a lotus. The site was considered to be datable upto the end of the eighth century A.D. for its full lay out and occupation, thereby suggesting that the gilded Maitreya bronze (now in the Madras Government Museum and taken as recovered earlier from this site accidentally), would fit into the age of this Buddhist temple, being a fine example of the early ninth century A.D. and comparable with many other bronzes of this stage in the lower Kaveri Valley stylistically, for the lay-out of these remains.

The *Buddha Vihara* wing, with nine cells in a row, measuring 3·10 × 2·40 m each at

*Fergusson published a wood cut of this structure which later in the nineteenth century was said to have been demolished by Jesuit Missionaries in this area.

Pallavanesvaram Phase - I has been earlier to the temple structures of its phase II, with a gap in between, as indicated by the debris layer sealing the life of the *Buddha Vihara* running further south to form the horizon upon which the subsequent brick temple was laid out (figs. 2 and 6). It would cover a period of about centuries or more, notwithstanding the comparatively meagre thickness of cultural deposit which does not exceed two metres. Its further linkage had been with Vellayan Iruppu- II where the chronology of the deposits and its conspicuously rich pottery and antiquities was approximately from the ninth to twelfth century A.D. This matches well with the literary, religious and historical data which became copious especially from the sixth century A.D. with the advent of the Pallavas of Tondaimandalam ruling from Kanchi whose feudatories and buffers, namely the Muttarayars, had established their rule over the western part of Thanjavur district and the contiguous areas of Tiruchirapalli and Pudukkottai districts and became known as the Muttarayars of Thanjai and Vallam, ruling over Kana-nadu. We find however that the Pallavas had accepted Kaveri as their natural and traditional southern boundary of their kingdom and venture further south only from the eighth century A.D. The early Cholas had thus been confined to the delta tract of the eastern part of Thanjavur district in the main in this period, especially since the writ of the Muttarayars and their further southern compeers, the Pandyans of Madurai, had been holding sway over the south east of Thanjavur district with the Pallavas to the north of it. This would explain why the site of Pallavanesvaram under the Buddhists and the locality of Vellayan Iruppu-II, representing a sampling of the secular cultural-political life of the Cholas, had been exemplarily significant. The locality of the Buddha Vihara (first phase) and the large Buddhist brick temple subsequently had been a hive of activity then, with its links noticed through Nagapattinam with the Buddhist contemporaries in Srilanka and the overseas Srivijaya kingdom of Burma, on the one hand, and through the Satavahana and the trade guilds with the Krishna valley sites of Amaravati and Nagarjunakonda, on the other, where Tamil Buddhists had been referred to as the *Dramilas*, in inscriptions in the latter place. There is also the occurrence of the small Buddha image and the Palnad limestone *Buddhapada*, within the monastic precincts which comprised monastic wings on the north of nine cells. The period from the fourth century and the end of the ninth century A.D. had, in fact, been the high point in Tamil Nadu for Buddhism and Jainism and since the latter had not been in the favour of the Pallavas (or for that matter, the Pandyas) who, by and large, preferred Jainism, the influx of Buddhists in lower Tamil Nadu, especially in the Kaveri delta was understandable, owing to its maritime links with Srilanka. Indeed, in the centuries between the seventh and the twelfth, Nagapattinam became a prime centre of Buddhism, as scores of bronzes from that place would reveal, apart from inscriptions and copper plate charters of Raja Raja I and Rajendra I Chola.

Although the site is called Pallavanesvaram, as the part of Saykkadu village which contained the famous Siva temple sung by Jnana Sambandar - in which hymns he is also referring to the incursion of the sea into a good part of Kaveripattinam as legendary historical event - the site today comes under Melayur (western village), as related to Kilayur (eastern village) which was further east and under which the wharf site locality of Mangaimadam falls, and had been a suburb of

Kaveripattinam of yore. In fact, the location of Vellayan Iruppu which is almost adjacent to Pallavanesvaram to the south of the road, is also coming under Melayur village. The excavated site at Pallavanesvaram is immediately to the north of the coastal central road and was a private land, under more than one ownership and a residential plots. Owing to the occurrence of brick remains at this place, it was chosen for excavation. We should note that the other structure at Pallavanesvaram which came to light at a later time (1973) along with the eastern large hall (for which in the meanwhile an additional piece of private land had to be acquired and access made available to if for excavations was oriented in a slightly different way, as already referred to, the structure being aligned to the cardinal directions. Other later sites like the Vellayan Iruppu-II and the Sampapati Amman temple also continued to show this cardinal orientation.

The *Buddha Vihara* wings were thus of an earlier period and its antiquities show it to be of the fourth century A.D. in the main, while the second or subsequent (phase-II) Buddhist temple was not much earlier than the sixth century A.D. for its inception and continued to flourish till about the end of the eighth century A.D. and became the centre of busy Buddhist activity. Its structural features are somewhat unique for the period and the region, notwithstanding the fact that brick structures were generally the tradition in the delta area of Thanjavur district and brahmanical temples had also been erected mainly in brick and stucco workmanship upto the ninth century A.D. especially in the eastern part of the district.

The technique of construction was on the basis of solids and voids. The plinth of the structure which alone is found preserved, as excavated, was built on layer 4 and was laid in a *pancharatha* plan with the *bhadra* or central face projection of upwards of 250 cm width, while the other two *rathas* were about half this width, the inset being not more than 25 cm. Within this, there was a central square tank-like void which below its debris showed a sand fill. This square was approximately equal to and aligned to the *bhadra* face - offset of its plinth, aligned to the *anuratha-karna* junction, and disposed around the central square void in concentric square layout were twelve more smaller voids, of which the corners were squares of about 30 cm width, while the central ones were somewhat 'S' or' L' shaped conjunct-squares with length of about 60 cm and right angular turn at either end inward and outward respectively of about 12 to 15 cm. This scheme applied, however, only to the northern, western and southern sides, while the four eastern small voids were all squarish and of the same dimensions as their other corner counterparts. If one would make a guess, this might indicate that the structure was facing east. We have already briefly noted earlier that such a technique of construction in voids had been seen in the Gupta temples of central and north India in some rare cases, as at Nagari in Rajasthan and Nalanda around the fifth-sixth century A.D. If, added to this is the fact that the structure was of a *pancharatha* pattern - which mode did not acquire currency as seen from extant brahmanical temples before the end of the seventh century A.D., one may presume that the structural tradition was perhaps affiliated to the north Indian Gupta mode, or was coevally practised by the Cholas in their early brick structure. It is to be noted that regular temple-like constructions for Buddhism are few and far between (the outstanding northern example being the

later temple at Bodh Gaya). There is a clear feasibility that this technique is on the principle of a astylar corbelling (earliest seen in principle in Dhamek Stupa, Sarnath, in stone veneer) vaults which even now is to be seen in some of the mediaeval brick built *mandapas* to stone temples in the Chola country.

The principle by which staircases would have been erected over these smaller 'S' or 'L' shaped voids around walls erected around the larger central void is similar. While the eastern smaller square voids would have carried perhaps hollow and plastered brick pillar facade. All these would have been supported by brick and timber cornice and rafter scheme *(varimana)* at the first floor level as the entablature, where the main shrine chamber in the centre (invertical line with the lower larger void) would have been located with an open ambulatory around. These 'S' shaped voids were in complementary pairs on each of the three sides, suggesting that whatever was erected met at a central point above which feature makes them paired staircase division with double flights of steps, one such on each side. Perhaps, there could have been an abridged second storey, mostly of timber work, over which the tower of appropriate shape would have arisen. But at least a storeyed construction could be visualised. The structure is thus of unique and outstanding importance giving a glimpse of the early Chola brick structure shrines, which themselves would have formed the forerunners to their subsequent brahmanical brick temples. There is no doubt that this was intended to be a Buddhist temple. We had a rare example of a multi-storeyed brick temple at Nagapattinam (a wood cut drawing of which was published by Fergusson as already referred to) which, however, had been subsequently razed to the ground by the early Jesuit fathers, in the colonial period, in order to give way to their Seminary location.

The fact that some ruined extension of the *bhadra* on the four sides are to be seen from the excavated plan, would show that a pathway leading from all the four sides was provided to lead on to the main plinth and by staircases to the upper level shrine. Alternatively, a statue erected on the ground floor central void would be stretching upto the upper floor, as is to be seen in some of the Buddhist monasteries of Ladakh where mud and bamboo are used for the walls which were subsequently painted on their interior faces in Buddhist murals. In any event, it is obvious that it was an elaborate structure with much of timber, stucco and painting, that would have been a landmark.

An interesting feature noted while unravelling this Buddhist temple - which was virtually extant only upto just above the top of the moulded plinth giving the mouldings like *jagati* and *kumuda* and *pattika* - (above the deep brick foundation going into the natural sand) - was that inside the central square masonry trough, there was a sand filling up to layer 4, when we note that the natural sand is struck much farther below, this liberate filling with sand upto the working layer is a feature that calls for reasonable explanation. Even the other smaller square and staggered 'S' shaped double square, variously around the central square or cubical trough, were also seen similarly filled with sand upto this uniform level. It is needless to say that this should have had a functional advantage in the construction. One plausible suggestion could be that this was intended to absorb and mitigate marine salinity of the natural soil which could be injurious to the brick structure through capillary attraction in the long run. This is almost a scientific provision against salinity which is adopted in many of the coastal monuments, as for instance, at Konarak, where the ruined cella chamber had been filled now with clean fluviatile sand to protect the fabric against saline sea winds and capillary action. If this is so, here at Kaveripattinam, we have a knowledgeable treatment afforded to the Buddhist brick temple, and underscores the fact further that it was expected to rise more than one or two floors height.

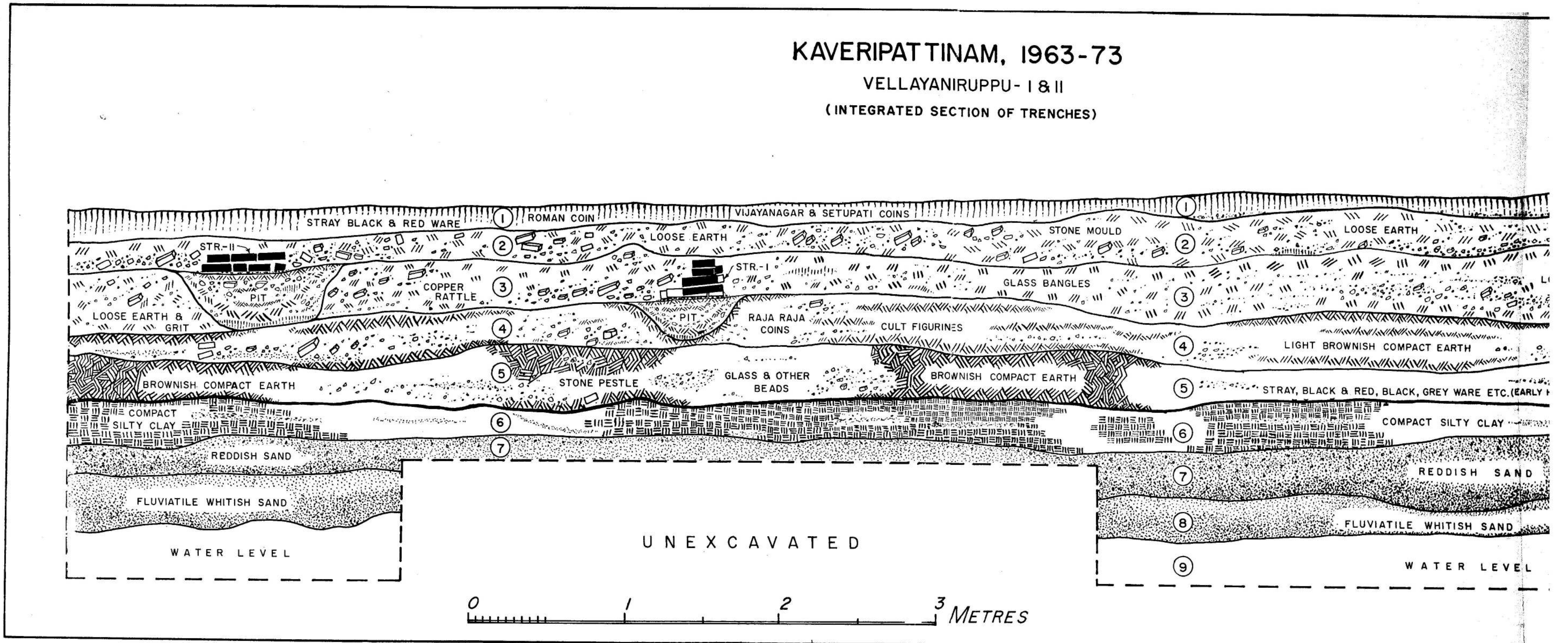

KAVERIPATTINAM, 1963-73
VELLAYANIRUPPU - I & II
(INTEGRATED SECTION OF TRENCHES)
STRAY BLACK & RED WARE
ROMAN COIN
VIJAYANAGAR & SETUPATI COINS
STONE MOULD
LOOSE EARTH
STR.-II
STR.-I
PIT
COPPER RATTLE
GLASS BANGLES
LOOSE EARTH & GRIT
RAJA RAJA COINS
CULT FIGURINES
LIGHT BROWNISH COMPACT EARTH
BROWNISH COMPACT EARTH
STONE PESTLE
GLASS & OTHER BEADS
STRAY, BLACK & RED, BLACK, GREY WARE ETC.
COMPACT SILTY CLAY
REDDISH SAND
FLUVIATILE WHITISH SAND
UNEXCAVATED
WATER LEVEL
0
1
2
3
METRES

FIG. 10

An additional advantage of central cooling through voids could also have been involved.

The Buddhist temple structure at Kaveripattinam (Pallavanesvaram site) is thus unique not only for the early Chola period of Tamil Nadu around the sixth century A.D., it represents here, but also for the whole of India. Indeed, we have very few parallels of such a type of brick construction undertaken at that early date, anywhere. We do seem to have such a tradition in brick construction in the Gupta period of north India, in places like Nagari (Gupta temple) in Rajasthan. The technique is that of using voids left in the foundation level of the building both in the centre and along the corridor circuit, for erecting, through astylar corbelling and coffering in brick work the upper floor. In the Nagari example, we have the brick foundation of square plan in the periphery of which a series of voids of regular columns had been left from the foundation flooring. Since the site itself is badly ruined above, there is no additional evidence relating to the superstructure. It is even more singular at Kaveripattinam where a system of four corner cubical voids were also provided. On the direction towards which the structure is facing, namely east, there are two additional cubical voids all in line between the two corners. On the other three sides, the series between the corner cubical voids is an 'S' of 'L' shaped void of oblong character of two staggered but mutually asymmetric squares (fig. 2). While the corner voids could well be for astylar columnar supports for the entire superstructure, the medial ones, especially on N, S and W would, thus, have probably been for organising a double staircase leading to the next floor (as is done even till today of turning steps) which seemingly would have been at the same level as the astylar closing of the large central square void (2·5 × 2·5 m). This would not be relevant for the eastern side and hence cubical voids only were seen there. If this presumption is valid then, it was also likely that it was the upper floor which might have contained the shrine, perhaps of the deity in fine stucco work apart from ancillary bronze images. It is also likely that over this upper floor, the superstructural tower would have arisen probably either of the *kutagara* or the *bhumi prasada* type, in a series of tympanic boards with coffered recesses around each course in a receding pattern, since such a design was a formative temple roof design all over India in the fourth-sixth century A.D. They also find mention in the 'Sangam' literature, especially about *Kutagara* (hut shaped). Hence, we may infer that such concepts and creations in brick, stucco, tile and wood were regular in the Tamil region already in the Sangam period and continued in the earlier Chola brick erections for religious and secular structures.

The width of the smaller square voids is 0·5 m and hence the width of the staircase treads will be of the same dimensions and the staggered double square would provide for the fan-shaped turn of the steps (as done even in modern times) and assuming that the ground floor would be about 3 m height, there would be six steps, each with a tread width as well as rise of steps of 0·5 m each. Such staircases are quite common in rural houses in Tamil Nadu even today. One sees such narrow staircases even in palaces like the Padmanabhapuram Palace of Kerala and seemingly reflected the need for security. At any given time, if three persons are climbing up the stairs, eighteen persons could reach the upper floor by the triple paired staircases of this Buddhist temple. This would give a picture of adequacy of these staircases for the Buddhist clergy and laiety here leading a private and cloistered life (figs. 8-9).

**Kutagarattu tunjiya nal-valudi*' about Pandyan sepulchral structural pavisions. Other types mentioned as '*Chitra-mada*' and '*Ilavandigai*'. *Kutagara* type is seen in Draupadi ratha at Mamallapuram and also finds a reference in *Kashyapc Silpa.*

CHAPTER V

POTTERY

The excavated pottery from the earlier phases of Kaveripattinam is divisible into two major categories, namely (a) those which become the diagnostic traits of pre-Christian and early historic usages like Iron Age burial, comprising Black and red ware and their developed forms[1]; the allied and somewhat later stage comperes like the all-Black ware, the early historic type-fossil of Indo-Roman trade era like the 'Rouletted' ware, and its own devolved imitations on other wares, and (b) the typical early historic pottery of the upper India 'Kushan' period generally found in other sites of the Satavahana and coeval centres of trade and cultural links in several ports of Southern India represented especially by the 'Sprinkler' type on red polished ware, associated with terracottas relating to the Nagarjunakonda (late stage). On the other side, there are later pre-mediaeval and early mediaeval plain wares with considerable decorations of 'applique' kind or of incised varieties on the shoulders and body which compare well with the symbolism and motifs of the sculptural and decorative arts, of the times; and those of the exotic influx like the 'green glazed ware' seen in the south east Asian archipelago, and the typical Chinese trade-index like the celadon wares and allied 'stone wares' and thin black wares, the latter calcined at high temperature in the kiln and producing thin vitrified section. Together , all these indicate the technological developments seen in common man's craft standards in the period broadly from the third century B.C. on the one hand and upto the twelfth century A.D. on the other. It must be noted that one may legitimately expect such varied, technically unique and commercially extra-Indian (in some of the cases) contexts in such a cosmopolitan port town which, if the literary records of the Cholas and coeval others in Tamil Nadu are any guide, had cast upon Kaveripattinam a distinctive place in the culture of the Tamils, their life style, their arts and crafts, and their penchant for multi-dimensional, spiritual and ritual - religious practices. While many of these wares had been prolific in many other centres of south India in their periods *per se* , it is the continuity of occurrence of all these, in their proper contexts, in the Kaveripattinam excavated sites, that bestows a degree of legitimacy and chronological linkage, most useful for assessing their time-range in this South Indian port and through it involving themselves into the archaeological pattern and history of Tamil Nadu itself in these eventful centuries. The stratigraphic correlations that help us so much in doing the phases of the site have also been immensely benefitted by their occurrence in specific layers in an interlocked sequence, and relate them, to a degree, with other coeval sites like Uraiyur (also briefly excavated by the University of Madras, as already narrated earlier), Arikamedu, and other upper southern Indian and upper Indian

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*However, no typical 'megalithic' or urn burial Black and red ware shapes were encountered in these habitation sites of the Port-City. They were, however, seen in surface finds, associated with urn-burial sites at Vanagiri (see item 14 of Appendix I- conical based bowl).

mainstream centres - into which, thus, the history of the early Tamils also gets integrated, in a participatory cultural mosaic. Notwithstanding the comparatively limited though, not intensive but certainly to a degree extensive distribution of the localities excavated so far at this port town, we thus get the totality of the picture which touches maritime trade, agriculture, religious activities and socio-political impacts of the time.

Further, the pre-mediaeval and early mediaeval pottery especially from Vellayan Iruppu-II would seem to fully underscore the rising importance of the zone for the puissant early Chola power, when they assumed Imperial title and prerogatives; and the coins, beads, terracottas, stone and metal objects also found in this locality give an adequate picture of the fact that while the more coastal part of the port-town had comparatively declined in its structural vestiges (with several other ports contending for importance like Nagapattinam and perhaps on low key due to the catastrophic incursion of the sea also around the fifth century A.D.), the hinterland sub-urban parts were by no means affected and went on from strength to strength and in terms of other standing monuments like temples from the seventh century A.D. onwards added a new glorious chapter.

We are, however, concerned with only the assessment of the pre-Christian and early historic periods or in other words the more ancient story of this port-town and in a purely complementary aspect, its pre-mediaeval stages, though they were integral parts of the transactions of the harbour area in the estuary in general life line. Trade, again, was by no means, under cessation it Kaveripattinam till the end of the Imperial Chola rule whereafter, it quickly fell into desuetude with the shift of political power to Madurai from mid-thirteenth century A.D.

The characteristics of the several pottery wares listed earlier in this chapter would now merit our examination. The Black and red ware, created by the technique of 'inverted firing' in the kiln (as different from saggar-mounted usages which get exposed to total oxidisation of the fabric of the pots) have certain typical forms in dish,bowl and lid types. While elsewhere, as at Uraiyur and Arikamedu, inscribed legends were seen on this pottery giving an additional comparative dimension for dating the stages, those from Kaveripattinam did not produce any of this category. It must, however, be emphasised here that owing to the prolonged water-logged nature of the estuary (unlike the occurrence of such pottery inside sheltered urns and other tombs of the Megalithic genre and especially the quondam multi-pronged streams and lagoons in the estuarine tract of Kaveri before it was to be trained further up as at Kallanai or Grand anicut; for irrigation from the third-fourth centuries A.D. - by which time this ware also becoming increasingly diminishing in its provenance) a degree of surface wear and tear besides only fragmentary occurrence could be accepted. Indeed, in an important site like Kilayur brick and pole wharf, the pottery had been so comminuted that its richness could not be satisfactorily evaluated in its contemporary context. Notwithstanding all this, it may be stated, typical dishes with sharp or featureless straight or incurved or mildly carinated rims or incised outer rim or in bowl forms with sharp and thick chamferred rim, or in lid types with typical knobbed holds, the sites had yielded characteristic types in good number. Only reasonably good rim sherds could be illustrated. They have also both the salt glazed and poorly fired types as well as those

with an even skin and polish. These have been consistently found at Vanagiri phase, Kilayur phase I & II, (but not in Pallavanesvaram Buddha Vihara phase) and Manigramam (developed phase of the early historic times). Their types show a gradual development from the wharf site to the Manigramam site and include grey and red wares, all-Black wares, the latter not found in the *Buddha Vihara* zone but in Manigramam site, thus showing their chronological position in relation to the more early phases of Kilayur and Vanagiri.

It is interesting, thus, to note that while Black and red ware has been duly recorded in the excavated sites of Kilayur, especially phase I, Vanagiri and Manigramam, it has not been forthcoming in the actual excavations of the *Buddha Vihara* site at Pallavanesvaram. The question of its being found in Vellayan Iruppu-II does not arise, as it is a pre-mediaeval and mediaeval location, but a very few sherd of Black and red ware had, nevertheless, been noticed as already briefly referred to earlier, in the lowest layer over compact clay and on the topmost levels the former seeming also as part of the movement of clay in the course of the marine incursion and also as part of the layers yielding ring well (below the pre-mediaeval deposits) or from the top where they were purely by accident. Its non-occurrence in Pallavanesvaram Phase I, *Buddha Vihara* site would, however, clearly goes to show that this Vihara was not built in the first three centuries of the Christian era. Its own internal evidence and antiquities and the non-occurrence of all-Black ware as well from here, sustain this position. This is an indirect evidence which helps the chronology of the sites of the port-city. On the other hand, the occurrence of the 'sprinkler' type and a few of this red polished ware class of hollow knobbed lids would additionally suggest that the Vihara site was in touch with other sites in the lower Deccan and this has caused induction of this characteristic pottery in Kaveripattinam. Further, it is seen that while Arrentine ware have not been noticed in the excavated sites *so far*, 'Rouletted' ware had been conspicuous by its presence and had been seen during earlier exploration (see Appendix I) in some other localities of Tamil Nadu also, not yet excavated. This 'Rouletted' ware design has been imitated also on some other wares for its design tradition,like the Black and red ware and plain red wares even. Obviously, it is the same community which had brought the 'Roulette' technique into the port, like the Romans, had become domiciled there and have the tradition of the 'roulette' design employed in the same manner on the other wares even after the Roman advent had ceased i.e., from the late second - early third century A.D. The layers in which these imitation' Rouletted' wares and 'rouletted' design prickings on sherds had been noticed have thus an evidentiary value for chronology and indeed link the time lag between, for instance, sites like Kilayur wharf and Vanagiri on the one hand, and the Pallavanesvaram site on the other, thus cross-checking the fact that Pallavanesvaram Phase I of the *Buddha Vihara* could not have been built before the close of the third century A.D. as discussed earlier.

There is thus a closely arguable case for the life of the Black and red ware, 'Rouletted' ware and imitations of the same, the all-Black ware (which again are relatively later to Black and red ware in the shapes indicated and interlock with the 'Rouletted' ware as the younger contemporaries, as already established by the excavations at Brahmagiri, Amaravati and many other sites. This matches

with the position of the 'sprinkler' type and knobbed lid types of the polished red ware category and tightens the chronology, which had been well reinforced by the physio-morphological horizons which had brought them first on the scene in each site. We are thus on safe grounds when we are able to bridge the time span between Kilayur and Vanagiri with Pallavanesvaram. The fact that Manigramam alone yielded all-Black ware in good measure, of all the sites excavated here, (apart from yielding Black and red ware) would indicate the mercantile community which seemingly had been responsible for its induction into Kaveripattinam. We note that Manigramam had yielded rather a thin deposit of a metre or less where, within the basal layer and the next (top) layer, there is the occurrence of Black and red ware, all-Black ware, ring wells and plain red wares only, but no major structural data. This might suggest that the mercantile community had been resident, though constantly peripatetic, at Kaveripattinam from the centuries prior to the Christian era and had continued perhaps till the time of the *Buddha Vihara* site and had shifted its activities to other centres of Tamil Nadu from the time of the Pallavas and closing stages of the early Cholas in this delta region, as evidence of other such mercantile guides in different parts of Tamil Nadu and Karnataka shows. It could also be that future digs in the Manigramam locality could yield some structures as well.

The pottery evidence from Kaveripattinam, thus, is fairly clinching, in not only the chronological aspect but also in the socio-cultural aspect.

Considering the entire site of Kaveripattinam as a whole, integrating the data of pottery especially, we see that the red ware traditions begun from the early stages have been continued for the entire period, notwithstanding accretions to the shapes and types in each stage. For instance, we find that flat bottomed vessels which were first introduced in the early historic period, as seen in Manigramam and Vanagiri, continue well into the Pallavanesvaram stage. Similarly all-Black ware traditions which were introduced through Manigramam, though not seen in that ware in other sites coevally, had been repeated in their shapes in the Vanagiri.and Pallavanesvaram. Dishes with a typical nail-head rim and flanged carination introduced in Kilayur upper layers had been continued in Vanagiri. Dish-cum-lid types with recurved flange rim typical of the period in many other Indian sites are also seen in most of the early localities, except Pallavanesvaram. Shallow bowls introduced in Manigramam and Vanagiri continue well into Pallavanesvaram. Storage jar tradition with narrowing inturned and pulled rims continue almost everywhere. Similarly pottery traditions began only in the Pallavanesvaram stage and of a sophisticated rim and shouldered storage vessel types are found repeated and widely evolved further in the Vellayan Iruppu-II stage. Indeed, one can say that in the Black and red ware types, there is a close correlation and evolution as between Kilayur early stage and Vanagiri and Manigramam. One even wonders if Manigramam had played a role in initiating many of these types, especially on the plain red wares. It can be safely stated, in any case, that the entire port-town, in several of its localities had taken a lively interest in maintaining its pottery tradition and their own fabrication and shape was of high standard and were consistently furthered. It is also seen that Pallavanesvaram pottery has a predominance of shapes which do not occur in the earlier stages, thus, perhaps suggesting not only that chronologically they reinforce the stage of the

Buddhist monastic site, but also perhaps owe their promotion at the hands of the Buddhist community which had adopted their own typical usages of a utilitarian and sturdy wares which suited their activities and life style best. Pre-mediaeval penchant for decoration of incised, corded and 'applique' types on the shoulder of the pots had also been seen initiated first in the Pallavanesvaram phase I and II stages. This would additionally show that there has been a sea-change in that stage in general cultural level, consistent with its chronological position, in comparison with other earlier localities. The richness of the terracotta and stucco traditions also seen first blooming from that stage reinforces this position as is revealed by the comparative chart of antiquities.

In a similar way, the exotic wares which had been introduced into the site, at various stages had also become pointers to the cultural evolution of the site, as a whole. We see Black and red ware as native to the basal matrix of the site in Iron Age. Then, the 'Rouletted' ware introduced new means of imitations, on other wares, coeval with it and even on plain red wares. Then the red polished ware of the 'Kushan' genre of upper India came into play in the early levels of Pallavanesvaram. In the later levels of this sites and the early levels of the Vellayan Iruppu site in the pre-mediaeval period, the advent of the 'green glazed ware' seen in the Indonesian Archipelago around the ninth century A.D. brought a new community of interaction with S.E. Asia. Then the Chinese Celadon and other ware came into the scene in the early mediaeval period which was the apogee of Imperial Chola power from the tenth and eleventh centuries A.D. Constructional traditions and orientations of structures also underwent a change from seventh-eighth century A.D. and continued in that pattern with the pre-mediaeval and mediaeval stages. Thus the vibrant character of the port-city as the clearing house of life style becomes apparent and notwithstanding extra-Indian maritime traits in a closer correlation with south-east Asia, the endogamy of the region in absorbing external traits, as different from playing a crucial role in reacting to it had also been displayed. There is essentially a difference, thus, between Kaveripattinam and Arikamedu, for instance. The crux of the matter, as explained by Wheeler, is that while the 'treaty ports' display a monopoly of exotic traits and traditions and direct transactions in supply and regulation of the commodity as well as the money economy, the 'emporia' type specializes greater in absorption and modification of its own culture by the spurts given. Kaveripattinam was essentially of the latter type, as its own name 'Khaberis emporion' by Ptolemy indicated, and indigenous culture always dominated. While Tamil Epic literary references as in Silappadikaram tend to give a rosy picture of the Roman impact on Kaveripattinam, archaeology, through the spectrum of material culture change, gives a more sober picture, of the history of this port-town and indeed underscores the ingredients in the native culture which had eventually led to the efflorescence of the 'Chola' cultural milieu in the whole of Tamil Nadu and other more northerly adjacent regions of south India.

The detailed inventory of the pottery from the different localities so far excavated now follows (figs. 11-29).

These are given in the order of their stratigraphic and chronological sequence and would comprise Kilayur first, Vanagiri next, Pallavanesvaram thereafter and finally of Vellayan Iruppu-II

(The last, so called, as the very limited digs of the earlier season at this site was called Vellayan Iruppu-I , and the substantial excavation in 1973 led to the further richer details here being designated as Vellayan Iruppu-II).

1. Kilayur Wharf Site.— Black and red ware was found consistently in layers (4), (3) and (2) and from the surface occurrence should have continued in layer (1) also which layer had been badly disturbed and eroded as indeed in the case of even the lower layers also alongside the structure, consequently on the desuetude of the Kilayur wharf site after sometime. These Black and red ware sherds in the upper layer, reveal also imitation Rouletted pattern executed on their interior black surface, suggesting the impact of 'Rouletted ware' design technique on them as the then current dominant technological trait.

The standard shapes in all these layers are deep bowls with featureless and occasionally internally thickened rim and infrequently with a sloping lower part, perhaps leading to a saggar base. Mention should be made in this context of a few thick to coarse fine grey ware pottery of well levigated clay, which have lost their slip entirely and present only the cement grey fabric. These may be, in the thinner cases, parts of a rouletted body and in thicker cases local imitations. One of the thicker sherds had a flat base which is often seem in this region in the Black and red ware from around the first-second century A.D. and associated with continuing urn-burial traditions and show thus the continuance of the same tradition on black and red ware from the earlier pre-Christian stages, to which the site pertains.

Of the rest which were mostly of coarse heavy to thick medium sized and to thinner fabrics, they reveal in layer 3 deep jars with well rounded rims, evolving through flaring, rounded and under, cut, and further to sharply out-turned and out-curved neck and rim types with globular body, occasionally showing externally chamferred rim also. They are shown externally grooved, collared and internally corrugated round vessels as well, of coarse and thick red ware. The other types of this layer are the characteristic lid-cum-dishes of folded (or recurved) and internally ridged rim, and narrow necked vessels with featureless straight rim prominently collared and beaded below the rim often externally. Also found are spouts of the knob type, with narrow perforation passage, the shouldered and tapering inner part of which have been luted into some of the above mentioned round vessels perhaps.

Some of the coarse wares appear to be handmade also with marks of ridged and corrugated body caused through finger pressure around the body of the vessels.

Layer 2 while continuing the deep jar with heavy rims also shows carinated bowls with flat-grooved and externally sharply pulled out rims, corrugated on the exterior neck and an over-cut shoulder for the carination. Coarse wares both of the black and red ware categories seem to predominate over the hand-made in this layer.

2. Vanagiri Inlet Sluice site.— On a number of sherds, mostly of Black and red ware, it has been found that on the interior, 'rouletted' designs, have been picked out from Vanagiri in a manner reminiscent of the true 'roulette' pattern. They have also in some cases a multiple petal design with

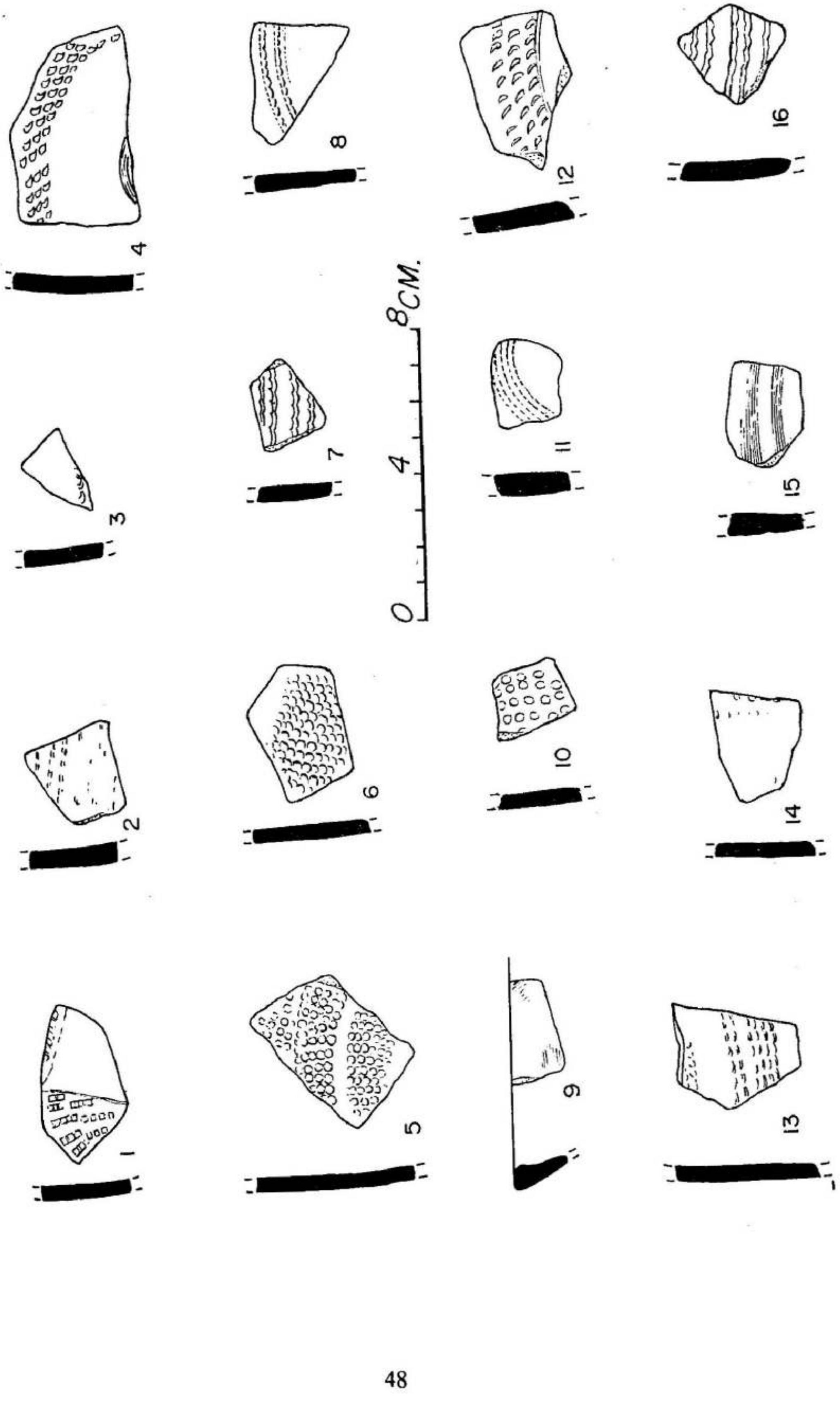


FIG. 11. *Rouletted Ware*

roulette pricks filling them. One of the fragmentary sherds presented a shallow sloppy bottomed dish type with not only the 'roulette' marks in circular pattern in the inner central part but also a rising central ridged space which is characteristic of the standard Rouletted ware dish itself. It is obvious that these had been subjected to the technical roulette' pattern on the typical fine grey ware. But their mechanical perfection precludes them from the standard category and as being manually picked only. There is thus a probability that the 'Rouletted' ware milieu at Kaveripattinam had been continued to be locally produced and the technique, as seen from Kilayur have been partially employed even on the black and red ware also, attesting to mutual coevality of the two types in such cases, at the least, and bringing thereby the terminal occurrence of the black and red ware itself clearly upto the first - second century A.D. if not later.

One of the sherds of a buff grey fine ground variety seemingly part of a fabric on which 'Roulette' design was usually made, has a sharply inturned and internally chamferred rim. It is possibly a dish with a flat base. It had got a fine grey core and emitted a metallic sound. Its exterior slip, however, as indicated earlier, is not of the standard 'Rouletted' ware milieu. It is seemingly having a band of black pigment along its outer rim. This specimen might suggest also a local manufacture of the 'Rouletted ware.'

This kind of pottery found in a large number of east coast sites of India on the Bay of Bengal and a very few interior sites also, in Roman Arretine association or without it, in the first century of A.D. levels had not only been available, without any Arretine pottery, at Kaveripattinam, but also had several imitations of the 'Roulette' pricking designs on inferior fabrics as well as on Black-and-red ware and red ware even.

The examples of this pottery (pls. XIXA and XX; fig. 11) are listed below :—

Vanagiri

1. A sherd where the slip had partially worn out showing in the other zones radiating roulette prickings which appear to have been displayed around the centre of the dish.
2. A thick sherd seemingly representing the dish which shows on its periphery of the base three rows of linear prickings.
3. A fragmentary sherd showing a row of concentric prickings.
4. A fragment of the base which shows the marking around the centre and a peripheral row in three lines of a semi-circular 'roulette' prickings.
5. A part of the thin base of a dish perhaps where in three distinctive zones concentrically, circular 'prickings' had been imparted, about four courses in each zone.
6. A sherd, probably the base, where a massive zoning in a curved pattern of honeycomb-like prickings have been made.
7. A sherd wherein, in four double wavy lines, engravings have been made by the 'roulette', forming perhaps the periphery of the inner base.

Manigramam

8. A sherd which thickens towards the periphery of the base where two rows of circular prickings have been made continuously, to make it a running design.
9. An internally wedged rim of a shallow dish which retains the greyish slip but has lost the polish.
10. A fragment where radial rows of circular 'roulette' prickings had been seen.
11. A fragment, rather thick in which a series of five rows of linear 'chattering' had been made to provide the border of the basin perhaps.
12. A central basal part where within a border thick concentric rows of prickings had been concentrically imparted.
13. A sherd showing two slightly separated courses of three (outer) and two (inner) 'chattering marks with a suggestion of an inner 'roulette' pricking towards the centre.
14. A sherd wherein the two rows of prickings had been worn out along with the slip.
15. A thick sherd where in concentre double zones, 'chattering' had been made, but had lost their sharpness by being worn out.
16. A sherd in which five concentre Zones of a chain design of prickings had been made.

Nearly two dozen sherds of Black and red ware were significantly present and displayed shapes mostly of shallow dishes with mild incurved and thickened rims occasionally sharpened or slightly inturned along the rim. In these latter cases, there were also shallow lids of flaring upper part and a saggar base. There were a few deep bowls also with featureless and thickened rim and a mild concavity for the sides. These sherds while displaying considerable wear and tear, having lain in water-logged clayey surroundings do not show the typical crackling or crazing by salt-glaze, as of the Megalithic pottery of this class and had also a weak slip or occasionally even a wash and fully bear out their late stage and also perhaps in relation to their urn-burial associations sepulchrally and may not be fabric-wise comparable with the Megalithic Black and red ware.

Of the rest which are predominantly of the red ware, the important shapes relate to the very heavy hand-made rims of ring wells or storage vessels, shallow dishes with thickened, incurved or inturned rim, either round or flattened top of rim and a coarse thick variety of lid with flaring body and everted rim, and large sized bowls with internally thickened and somewhat flattened tops, besides shallow examples of the same, and thin deep bowl types with concave sides and featureless rim; round bottomed vessels of variously carinated types with sharply flaring and out turned rims and corrugated high shoulder, the slip or wash being applied mostly to the interior and upto the carination on the exterior, or vessels with out-turned rolled or beaded rims; or those with narrow flaring rims without neck and sharply bulging out for the body; and smaller size vessels in coarse thin red ware with internally and externally rounded neck.

There was one example of a part of hand made conical spout which seemingly had been attached to a round-bodied water vessel of coarse red ware. The marks of luting were evident on it.

Occasional resort to multiple incised lines on the shoulder was disclosed in some sherds, also of coarse red ware.

Two examples of incised, decorative types were found, both of them on coarse red ware, one of which seemingly was a button-based flaring bodied bowl, near the bottom of which zoned triangular incision with a sharp instrument had been found and in the case of another, a crude representation, possibly of a boat, with a long pole stretched outside it. The boat was outlined in concentric stroke pattern, on the interior of the vessel. A third example of partly punched and partly incised deep bowl of thick red ware carried the motif of a cobra-hood whose face on either part of a central rib had been pricked in stippled filling.

The Black and red ware occurrence in the stratum also had diminished to a few specimens, of mildly concave deep bowls with featureless rim.

Of the rest, comprising red wares, the types were of heavily rolled and externally dipping rim and storage vessel; deep bowls of thick red ware internally thickened and externally flanged or thickened into a clubbed rim, with a steep body profile; mildly corrugated vessels with everted and rolled, undercut and internally ledged rim; everted sharpened and flaring round bodied vessels; a heavy internally rolled flaring shallow dish,;and a series of shallow dishes of mildly incurved or flattened thick and corrugated rim and shallow body, with one example of narrow vertically rising rim and shallow tapering body; two deep bowl types, one of clubbed rim internally thickened and another of everted and externally ridge-necked type of thin ware, and a set of characteristic internally folded and rising featureless rim vessels, prominently flanged outside, which form a typical early historic type in many parts of upper India also, and serving as dish-cum-lids. One example of a rather unusual externally chamferred undercut and sharpened drooping rim with corrugated vessel body seems to remind one of the family of the typical Ahichchhatra 10A variety of the late stages of the N.B.P. ware in upper India, and is of coarse ware. Its chronological position in this assemblage is not too wide off the mark.

3. PALLAVANESVARAM.— It is interesting to note that while its site of Pallavanesvaram in its essential characteristics had been mostly inter-locked with the upper level finds of Kilayur and Vanagiri excavated sites, both *Silappadikaram* and (more so), its sequel, *Manimekhalai* refer to the Buddhist centres here. The fact that Buddhadatta is recorded as having stayed in a *Vihara* here and wrote his Prakrit work the *Abhidhammavatara,* is significant in this context. Buddhadatta is taken as pertaining to the fifth century A.D. Since there are two phases in this Buddhist complex site of Pallavanesvaram, as excavated, and since the Vihara of the earlier stage had been superseded by the Buddhist Brick temple of the sixth-seventh century A.D. and Buddhadatta's stay in a Vihara could not have referred to this latter Buddhist temple, we are led to consider, firstly, that the tradition of his stay in a Vihara at Kaveripattinam was basically sound and acceptable as, otherwise, if it was the second stage temple, by that time, the marine incursion had taken place and would have been clearly mentioned by him in his records. On the other hand, *Manimekhalai* positively refers to the curse of goddess *Manimekhalai* that this grand city should be encroached by the sea. We have no doubt also

that since both *Silappadikaram* and *Manimekhalai* are post-fifth century A.D. the reference in the latter to the sea-incursion, is in order and had seemingly become a reference futuristically to a *fait accompli* by that time. On the other hand, since upto the early fifth century, the Buddha Vihara site of Pallavanisvaram had flourished from its inception perhaps from the opening of the fourth century A.D. and was not extant at least from some part of the fifth century A.D. the second stage Buddhist brick temple having been of the part sixth and seventh century A.D. — it is correspondingly to be taken as reinforcing the excavated stratigraphic data and would place the Buddhadatta traditional presence in the very beginning of the fifth century A.D. It would also be supported by the circumstantial literary fact that he wrote his work in Prakrit, since in Tamil Nadu itself Prakrit usage for Buddhism would have been restricted to the first four centres of the Christian era and from the fifth century records, Sanskrit and Tamil of a standardized pattern on Tolkappiam grammar would have been widely current.

The excavations here, thus, are of great significance for the reconstruction of the history of early Tamil literature as well and may indicate the stand taken by certain Tamil scholars on the date of Tolkappiam and allied issues.

The excavations certainly revealed also, on the other hand, the right context in its phase II of the Buddhist brick temple for the accepted provenance for the gilded Maitreya bronze (now in Madras Govt. Museum) as it could very well have formed a part of this elaborately laid out Buddhist temple only, by its own stylistic date, comparable with several other known brahmanical bronzes of like date.

The early level (Layer 5) of compact clay of the site upon which the monastic wing was built for the first time, introduced a familiar diagnostic type of the early historic period in India and in the Buddhist sites of Deccan or upper southern India, namely, the 'Sprinkler' type in red polished ware and a specimen of - the associated body of the sprinkler jar with upward rising nozzle spout. The spinkler variety is of medium quality fabric, of thick section carrying a well smoothed outer surface to which a dull reddish slip has been ever applied and burnished. Over the globular body, it carries a tall stem-like neck, tending to be concave and flaring towards the top and having a centrally knobbed and externally corrugated and flanged rim. The central knob is perforated right through, widening as it goes downwards to meet the shoulder. The other type of the same fabric represented a nozzle spout, also carrying a fine reddish slip, and internally the base part of the nozzle or spout is provided with three carefully perforated holes to allow the contents to be poured gradually (filtering any solid particles) through the perforations. Incidentally, the zone just above the nozzle stem is damaged but it would seem that it might have had some applique ornamental motif, human, animal, or bird, as is sometimes seen with such vessels. Counterparts of these two are available from Maski Chandravalli, Kondapur, Amaravati, etc. belonging to second-third century A.D. stages there.

In its plain pottery traditions, the next layer (layer 4) continued the red ware usages, also seen at Kilayur, Vanagiri, Manigramam, etc. Preferred shapes were jars with externally thickened and rounded heavy rims or flaring out-turned rims;, and large water vessels with a straight thick

featureless rim, internally flanged at the neck and externally prominently grooved and ridged, with a projecting collar with oblique incised slashes on it. Bowls show heavy incurved and internally thickened and outwardly slopy rim, or sharply inturned featureless rim.

The next layer (layer 3) carries forward the whole known repertory of pottery shapes comprising, deep bowls, with rolled thickened or externally flaring rims, round water vessels with out-turned grooved-collared rims, or bud-shaped or heavily beaded rims of either reddish brown or chocolate-slipped varieties, carinated dishes and shallow lid types, besides spout varieties.

One type which particularly might merit mention would be (a) big jar with internally smoothened vertical face and heavy vertical externally wedged rim with expanding body in the rather unusual variety of white pottery of the Kaolin ware family, which has been internally deeply grooved rounded and had everted rim, narrow neck and expanding body; (b) sherd of a grey ware seemingly a lid type with flat bottom base externally corrugated and flaring body and an acutely chamfered external rim, and having a fine buff coloured slip; (c) some meagre examples of red ware fragment carrying brush lines of red pigment, without the total design being available. Of such decorated variety pertained another sherd, externally ridged and grooved on the shoulder, within which pellets were fixed seemingly at intervals. One other decorated sherd also had deeply ridged shoulder with deep oblique incised slashes below and vertical incisions above, in the latter groove of which fixing of earlier pellets of applique pattern had been adopted; another variety executed on the deeply undercut and grooved underside and acutely quadrantal collared rim of a thick deep jar variety, comprised embossed applique pattern and oblique incisions at regular intervals.

An interesting fragment of a spout seems to indicate that it is a part of the family of the burnished red ware sprinkler, though meagrely preserved.

Among the lid types, the inwardly folded, and raised rim type with shallow saggar base and the deeply flanged and prominently raised rim type with shallow base should be seen also as continuing this earlier tradition. Small sized carinated bowls of a coarse to medium fabric, with a wash only on it, and of incurved internally thickened and grooved and externally collared rim with ridged neck and sharp carination also seen. There were also types showing prominently pulled out and clubbed rim with smoothened longitudinal top surface, and lids of accurately flaring and rounded rims with internal grooves and very shallow body.

Decorative Pottery

A class of large sized storage jar, seven in number, in red ware of medium fabric with thick top grooved and externally clubbed and internally also grooved rim and neck parts deserve to be specially mentioned in this category, by its providing a variety of applique folk ornamentation of seemingly cultic value, showing rows of stylised human figures with outstretched arms, lower part of the body, however, missing in most cases, but seemingly with outstretched legs as well as seen by the trapezoidal expansion of the body. It seems to represent both sexes and has pierced eyes, prominent

ear ring of the *'patra kundala'* type and often carrying a pannier-shaped head-gear. They are usually placed with their heads close to the rim part of the jars. As could be gathered from a few cases, they also seem to be accompanied by some animal forms, also in applique technique, near the outstretched legs. The legs carried anklets. One instance in a slightly smaller sized vessel of this category carried the applique motif of a hooded cobra. This type has also been met with, a seen above, in other sites like Vanagiri of a slightly earlier period. The animal is seemingly a bull whose horns - are prominently available together with the hump in one case. They also have been given pierced eyes and incised eyelids.

There seems to be evidence of a sudden change in the activity of this site in this layer, and pottery shapes are unusually in great number. It is noted from the stratigraphy of the site that the monastic cells occurring on the northern parts of this site (which is a slightly low-lying zone) had ceased to function after Layer 3 which together with Layers 4 and 5 were contemporary to the *Vihara complex*. Indeed Layer 2 had produced much pottery due to the accumulated debris, caused by the cessation of normal activity and unmethodical use and disposal of pottery and presents an undulating surface level within the monastery part and had brought some pottery from the slightly higher adjacent part, outside the monastic precincts. This has naturally included in the pottery all the accumulated sherds (particularly in the Sector the monastic cell which limited the Vihara complex proper, as per the layout of the trenches.

South of this line, in the course of time, with an interval probably of some decades, a second stage of monastic life had begun, with the construction of a major brick temple of square (*Pancharatha)* plan with considerable complexities of construction, as described elsewhere in this Report. It is seen therefore that not only is a sudden richness of types (with a broad continuity of some tradition) but also a lack of coherent activity in the monastic wing area during this period, until the stage of the completion of the Buddhist temple which is built on this layer, with its foundation cut into the earlier layers. The monastic activity thus was seemingly stopped in the close of the fourth-fifth century A.D. phase which is the life time of this first stage, until sometime in the sixth century A.D. The second stage of the Buddhist brick temple (in different size of brick and life style) came up towards the southern part of the site. Thus while much of the pottery in this layer could be mixed assemblage, it nevertheless shows a continuity of tradition and brings a significant change, seemingly ritually also for Buddhism at this site, as different from the early *Mahayana* stage that the Vihara life of the monastery would have revealed.

Literary references uphold the advent of special evangels of Buddhism like Buddhadatta who is said to have stayed in Kaveripattinam and had written to Prakrit work there, in the fifth century A.D. should not have obviously been related to the second stage of the Buddhist complex excavated here, and this was followed by the expansion of the activity towards Nagapattinam. The famous Maitreya gilded bronze (now in Madras Govt. Museum) was found in this Kaveripattinam locality.

Of the pottery which had got mixed in this layer, out of context, should be included even some

celadon ware in the finds. One sherd among these was belonging to the thin vitrified black fabric attributed to be of Chinese origin also, seen elsewhere at Hampi etc. However, there are two sherds which were of thin sectioned grey ware burnt at higher temperatures than ordinary wares, with a green 'reserved' slipped thick bands on its outerside, and another which represents a 'stone ware' of the early mediaeval period. It is likely therefore that these three fabrics should have been inducted into this debris layer, due to sub-aerial erosional activities taking place later in the site, when Chinese contacts had become habitual in this region, under the Imperial Cholas.

Among vessels of special interest which otherwise continue to reflect the shapes, designs and texture of the lower Monastic levels can be mentioned a handled cup (or incense burner?) of coarse purplish red ware with washed exterior and matt interior. It seems to have been provided with a dark band on parts of the outer body.

The bulk of the pottery of this deposit, Layer 2 contains the fabric design and shapes seen here and in other sites like Manigramam and present no major changes, which represent parts of the balustrades of entrances and representation of projecting elephant heads as ornamentation of structures of brick will merit mention and seem to suggest that these could indeed have been in use in the adjacent temple site.

The plain wares comprise deep jars with acutely incurved upper body and rim, with ornamentation of loops made by finger nails, besides incised slashed further below; lid-cum-dishes of flanged, externally grooved and corded or multiple grooved, with raised inner rim; vessels with out turned and outwardly drooping collared type with bands of vertical slashes on the shoulders; or deep bowls with tapering body and externally thickened rim, of coarse ware with flat bottom, or jar with a well widened and flattened rim externally undercut and a concave body; besides one unusual example in coarse red ware treated with a fine pinkish red slip and decorated by a zone of apex-bottomed triangles within which slash marks similar to the imitation rouletted ware seen elsewhere at Vanagiri etc., are displayed. This last shows that the fancy for 'rouletted' pattern had seemingly lingered for atleast two centuries and more after its primary occurrence.

The pattern associated with the temple site which had, the virgin character of the soil at the time of its first construction, is revealed only in its contemporary phase of life, which overlaps as suggested elsewhere, with the culture debris of the earlier monastic site. For the same reason its lower levels are devoid of pottery and Layer 2 of the temple site had yielded contemporary materials of a distinctive kind. Of these the pottery, by and large is a continuation of the thick red ware and the thick grey ware tradition, often provided with a glossy slip or black bands and of shapes ranging from deep jars with concave body and rounded rims externally thickened; round vessels with out-turned and flaring rim; bowls possibly carinated with straight neck and edge; and flaring bud shaped rim; bowls with exterior corrugations and smoothened and thickened broad rim.

Aside of these, a category of pottery-cum-antiquity type is represented by lamps of several distinctive varieties, both of the plain incurved rim type with pinched lips and of well-mouthed but

often handmade lamps with prominent beaded rimmed channel lip, decorated sometimes with pierced bands on the edges, or pierced pellets on the channel side, with a sufficient ridged space around for holding or handling and central depression for containing oil. These are both of the slipped and unslipped red ware and grey. It is obvious that these could have been employed in large numbers in the Buddhist temple and monastic complex, where they would have been placed in niches of the interior parts. Twelve examples of these are illustrated under terracotta antiquities. They do not, however, have any comparability with Indian examples of Roman lamp types of the first-second century A.D. which are distinctive, as the Kaveripattinam examples are of the fourth-fifth century A.D.

Also found were heavy knobbed lids with a central button knob and a grooved thick collar, tapering to a rim which is damaged and should have been used for covering water vessels etc.

Layer 1 which is a common denominator of the top debris of the entire monastic site of Pallavanesvaram has also yielded the remnants of pottery shapes of red ware essentially, profuse tiles (see Appendix VI) and examples of stucco plaster over brick work, as also fragmentary stucco figures.

Of the latter one fragment seems to be of a shoulder portion, on the upper arms of which the traditional metal clasp *(vangi)* with upturned and downturned terminals seen. This also has patches of green and red paints left on it. Mention may also be made of fragments of brick which have been used as burnishers, by the well worked underside and handy size.

4. MANIGRAMAM (pl. XIX B)— Manigramam was briefly excavated, as it was the westernmost side, to find its links with the port-site. It revealed essentially three layers including the top humus. They are now respectively called layers 3, 2 and 1 (including the humus).

This site (Layer 3), while reflecting the general range of pottery types seen at Kilayur and Vanagiri, seemed to show some distinctive varieties both in red ware and in all-black ware which was present in this site much more conspicuously than in any other site of Kaveripattinam.

A medium sized deep well rounded bowl type of the all-black ware, with evenly flattened and internally sharpened and grooved externally double grooved rim found here was not seen in any of the other sites.

'Rouletted' ware designs executed on black and red ware were, again presented mainly at this site.

Of the red ware types, apart from deep jars of heavy collared, thickened flaring and out turned rim types, already noted elsewhere also, thinner wares with internally grooved rounded rim, vertically set neck and deep body were also seen. Of such deep-bodied rounded vessels, one of the gourd shape with well-everted and prominently beaded and sharpened rim may be mentioned.

Of vessels with flat base, with pulled out of ridged flat base, mention should be made of one where the base had been removed from the wheel by a wire, leaving concentric spiral corrugation on it, suggesting developed techniques of throwing on the wheel. Bowls were, again, variegated into

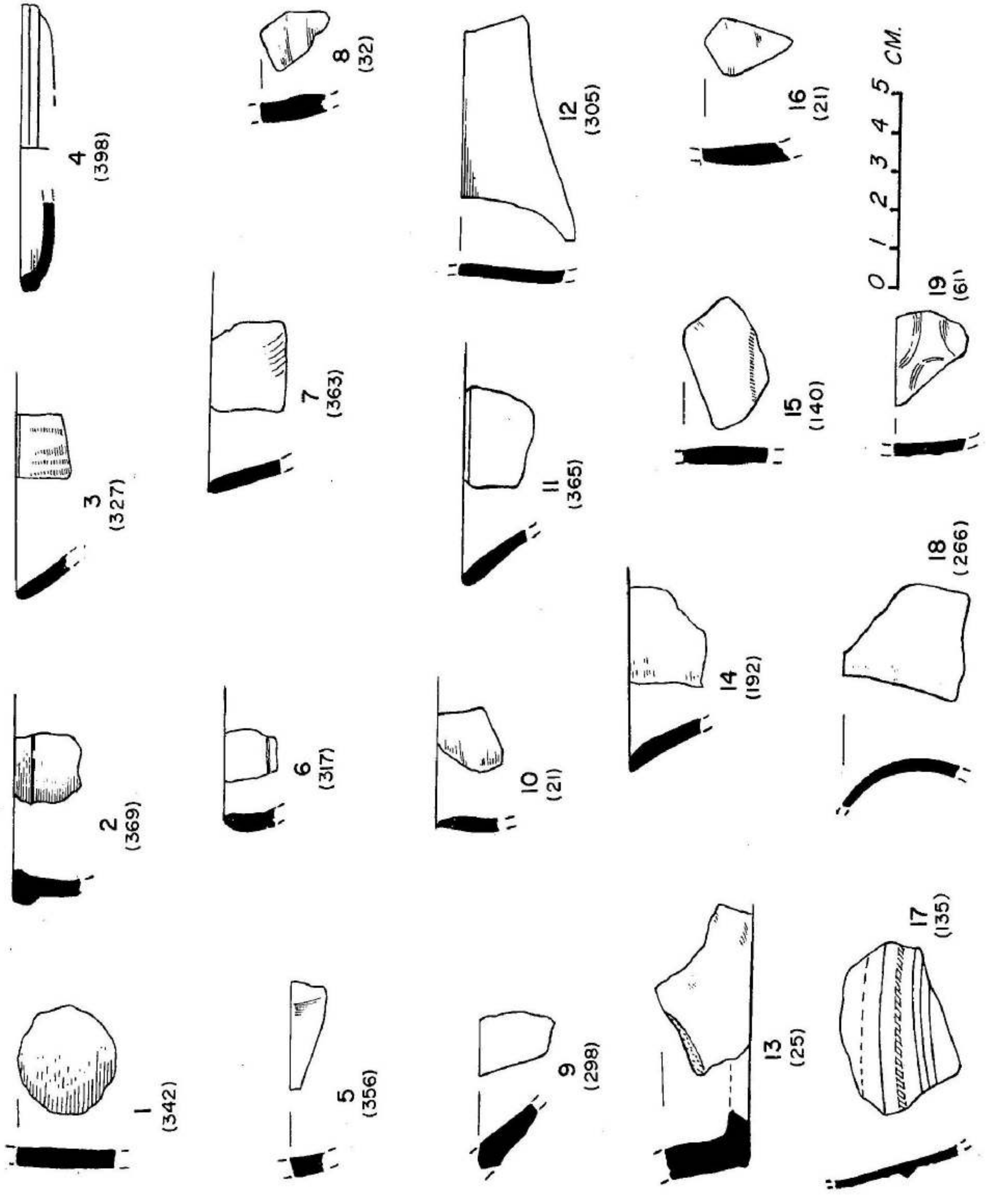


FIG. 12 : *Celadon, porcelain and other wares from Vellayan Iruppu II*

many rim forms and one of them on a coarse variety of Black ware had knobbed decorations on the outer rim.

Lids were of the usual pattern, of flanged or ridged and flaring or thickened featureless forms, as seen in other coeval sites here.

Manigramam did not show any layer which could be considered as contemporary with the Pallavanesvaram Buddhist complex (fourth century A.D. — seventh century A.D.) nor any mediaeval layers, in the trenches dug. It is thus likely that while the antiquity of Manigramam was clearly comparable with Kilayur and Vanagiri, by the fourth century A.D. and after, the habitation had perhaps shifted to another locality in the village. Slightly later inscriptions mention Manigramam as a prominent merchant guild centre. The surface finds of a punch-marked coin here, a unique square copper coin with tiger emblem (of the early Cholas) would surely fit into the early phase depicted by the excavated pottery and antiquities. A number of coins belonging to the mediaeval times of the time of Raja Raja I and his son Rajendra I from here in the topmost level also need not occasion any surprise, as this period saw uniform use of the regional coins and other antiquities throughout the core area of the realm which Thanjavur district represented. On the other hand, the excavated trenches clearly suggest how Manigramam formed an integral part of the ancient Kaveripattinam. It might have been part of the hinterland *Pattinappakkam* sector of the port town, while both Kilayur and Vanagiri formed an integral part of *Maruvurpakkam* sector, and described in *Silppadikaram*.

Pottery from this layer (Layer 2) continued. Virtually most of the types of red ware of the earlier layer and of notable mention among the special fabrics should be one of a 'Rouletted' ware dish, devoid of slip, showing the wedged and internally chamferred rim characteristic of the chief type of this ware; and a fine all-Black ware thin fabric or perhaps of the classic 'Rouletted' flat dish type with a shiny slip on both the exterior and interior.

Decorations by way of incised dots on the shoulders of carinated vessels had been noticed. Some of the types have a corrugated inner body. One such of a pinkish red slip has a prominently flaring, flanged rim, externally chamferred and undercut and a horizontal shoulder amidst grooves and ridges carrying incised dots.

In Layer 1, Black and red ware, all-Black ware red ware deep jars, rounded vessels, carinated dishes lid types had all showed continuance.

In the all-Black ware, one specimen was a deep bowl (a development of the type mentioned earlier in the lower layer 3) with horizontally flattened and externally projecting rim.

A red ware jar type with sharply incurved rim and narrow mouth; a knobbed lid of a conical button knob type with a flaring body, the knob being hollow may also be mentioned.

Specimens of decoration of vessels of thick red ware comprising triangles on the lower part of the shoulder filled with detached incised chattered strokes, simulating the 'rouletted' prickings,

besides incised slashes on the upper shoulder would deserve mention.

Chinese Celadon and other thin vitrified ware

Celadon wares had been convenient mark where found in the coastal sites of a Chinese association in trade with India, as with other parts of the Indian ocean pool. They appear around the ninth-tenth century A.D. and go on upto the twelfth century. They are not found in south India in the eighteenth century A.D. Other vitrified wares of thin shiny black texture are seen to continue from the twelfth century A.D. almost upto the sixteenth century, as seen from some of the Vijayanagar sites like Hampi. At Kaveripattinam, celadon examples had been quite a few in the excavations though in a fragmentary condition (pl. XXIII; fig. 12). They comprise plain types of both green and creamy shades but also the 'embossed' decorative design types, in what are called 'Marco Polo' type as well. These together with the vitrified wares, as found in Vellayan Iruppu-II site in stratified condition, are described below. Of course, from the surface, they were found from many other localities as well.

1. VIP 342 layer 4. Thick fragment of a stone-ware converted into a hopscoch game piece of circular shape (silver grey).
2. 369 layer 3. Celadon ware bowl with flat internally pulled and externally beaded rim and steep profile (white).
3. 327 layer 3. Celadon piece with flaring feature-less rim of a basin with embossed floral petal design (Marco Polo type) bone white.
4. 398 layer 3. Light biscuit porcelain ware shallow but with flat base and beaded rim.
5. 356 layer 2. Celadon fragment of lower body curving to a basin (bone white).
6. 317 layer 2. Porcelain bowl with incurved blunt rim with a groove mark on the waist (light biscuit).
7. VIP 363 layer 2. Deep bowl with a widening featureless rim and with multiple slash design on the sides (ivory).
8. 32 layer 1. Celadon fragment probably of a broken rim of a deep bowl with internally thickened and sharpened rim (pearl grey).
9. 298 layer 1. Celadon rim piece of shallow basin with flat and blunt arrow head shaped thick rim and flaring sides (pearl grey).
10. 21 layer 1. Celadon fragment of the thick body of a bowl (silver grey).
11. 365 layer 2. Rim fragment of a celadon basin with flaring featureless thickened rim (ivory and silver grey with brown).
12. VIP 305 layer 2. Rim fragment of a celadon piece. (light biscuit).
13. 25 layer 2. Thick celadon base fragment of a button-based bowl (silver grey).

14. 192 layer 1. Flaring basin fragment of celadon with everted internally thickened rim and body (silver grey).
15. VIP 140 layer 1. Celadon body fragment with decorative ridge on the inner surface (white with blue line on inner side).
16. 21 layer 1. porcelain bowl with everted pointed rim and internally thickened steep body (portland stone).
17. VIP 135 layer 1. Thin vitrious ware with rows of decorative ridges and design in the inside of a medium sized basin (cream).
18. VIP 266 layer 1. Vitrious fragment of smooth circular body-curve of a small round flask (cream).
19. VIP 61 layer 1. Vitrious ware fragment with triple embossed multi-curved designs on the body (bone white).

5. VELLAYAN IRUPPU II.— In many respects, the Vellayan Iruppu-II had proved to be the firm historical and chronological transition from the early Historic Stage (upto sixth-seventh century A.D.) of Pallavanesvaram, with the pre-mediaeval beginning from the end of the eight century A.D. Indeed the fact that the lowest layers of this site even contained some black and red ware (apart from those on the surface) and all- black ware fragments, not in their *in situ* contexts but seemingly brought by the shifts of dark brown compact clay as a result of the incursion of the sea, perhaps ascribable to the late six century to early seventh century A.D. would show that the pre-mediaevel period was after a short hiatus in civic habitation, especially in the more easterly locations of the port town of the underlying the early historic. It confirms also that there was no cultural break but continuity although the bulk of the pre-mediaeval pottery from *c.* 800-1200 A.D. had been of a different ilk in shape and fabric and was also characterised by its own exotic features, like the 'green' glazed ware (pl. XXII A), the Celadon ware, the thin black vitrified ware (in the middle levels of this site around the eleventh century and after).

Pottery from the lowest layer (layer 5) is characterised by both hand-made thick storage vessels as well as medium sized ring stand like vessels (pl. XXII B). The more carefully potted among the wheel-made ones are of the red ware, both of thinner and thicker section and comprising deep basins with either knife edge rim, ridged at the top or highly incurved rims with flattish grooved and beaded top or similar ones with slightly lesser incurving but having grooved and prominently beaded rim, thin out-turned flanged and chamfered or externally undercut types; carinated shallow dishes with either a slopy shoulder or a straight shoulder above the carination; round bottomed vessels which occasionally have streaks of red slip as ornamentation over the self-slipped surface; flaring shallow-lids either with a grooved and collared rim or with featureless thick rims and occasionally with a ridge on the interior middle forming a central bowl-like depression at the bottom; decorations comprised multiple grooves or rubbings with or without a zone of vertical incursions below, generally on the shoulder of the pots. These traditions seem to have continued throughout the subsequent layers of this site also.

Outstanding Celadon ware was not met with in this layer. Mention should however be made of a hand-made vessel, stand-like, which unlike the usual ring stand forms, has what appears to be a hour-glass shape, broadly speaking, the upper half flaring wider in comparison with the lower and showing marks of wear and tear in the upper part of the interior, while the rest of the interior showed evidence of a thin slipped surface. Partly potted medium sized deep bowls wit an internally flanged and undercut rim may also be mentioned.

Pottery from next layer 4 shows a sudden and welcome spurt of quality and variety and quantitative profusion. Well made slip of both the haematitic and red ochreous varieties were becoming common. The vessels of better and thinner section start showing a variety of design repertory comprising incisions, grooves, impressed patterns, geometric multi-grooved 'W' shaped bands on the upper shoulder, apart from carefully grooved or incised and concentric ribbed types of rims showing some sophistication of production. Along side, even plain pottery becomes more and more of irregular designs made of streaks of the slip material on the self-slipped body, both in grey ware and red ware types; lid-cum-dishes with a central depression, apart from lamp types were also seen. Bellied jars show varieties of both beaded and undercut or thinly collared or obliquely chamferred varieties. Even the unslipped red wares among the carinated types show considerable diversification of forms and in the nature of flaring rim. Some vessels also show narrow flat bottoms, almost like a button base. The flaring vessel-stand type noticed in the earlier layer continued. Some of the deep jars showed highly drooping and sharpened rims, prominently chamfered outside. Vessels showed slip designs on the interior as well as in the form of horizontal and vertical bands.

Nozzles of applique types, besides knobs of a simple high button type as well as heavier knobs with grooved waist and curved thicknened top were also noticed.

Red wares continued to predominate over the grey ware types. Fragments of a 'stone ware' type whose outer glazed surface slip had gone, and of the 'green-glazed' types marked the existence of the exotic type. The latter is a type fossil of the Indonesian archipelago in the ninth century A.D. and has been noticed at Kaveripattinam and in India for the first time.

Continuing the tempo of the earlier layer, the variety, size, fabric and quality of the red ware type increased enormously in the next layer 3. Meanwhile, vessels were another category which increased in number showing the range of utilisation. These included flaring, flanged, carinated shallow dishes, highnecked and drooping rimmed and blunt shoulder types. A prominent series of thick wares show the type with a hollow stem carrying multiple corrugated ridges on its exterior as well as the top and having funnel like central cavity and seemingly representing a stemmed stand type for supporting vessels. These were only slipped externally and had more than one size.

Slips on pottery in this layer ranged from ochreous to red haematitic and chocolate colour. Design repertory continued to be varied and by now several impressed designs of oblique, pricked row of slashes, circlets and nail incisions and bands of vertical incised patterns separated by horizontal grooves, apart from corded pattern seen immediately below the rim, on the shoulder of

deep jars, had been observed. Nozzle varieties also were many with the terminals decorated with beaded grooves, incised lozenge, other devices and with the smoothened and well perforated functional parts. They were also of differing sizes.

Conversion of fragments of pottery into discs and square blocks, possibly for games like hopscotch etc., was also noticed. The occurrence of Celadon ware was observed. The light brown and the green variety in these, in addition to porcelain of thin section and shining creamy exterior with multiple grooves and sharp ridges were the design elements. Two fragments variously from layer 3 as well as layer 4 reflect the continuing occurrence of Kaolin ware seemingly the exotic introduction from Chinese sources in the period within the eleventh century A.D. One of them was a narrow neck of a flask with concave exterior smoothened almost into a fine surface originally and not seen in this treatment for the interior and which was stained around its inner neck with commodity, it would have contained, perhaps, medicinal or any unguent or liquid.

The other piece was the tapering nozzle of a narrow mouthed flask, not unlike that of the above or even bigger in size and had the same stone ware on kaolin thinning out towards the tip into an even sized passage. Both these pieces were seemingly raised to temperatures higher than that of the ordinary pottery in a controlled kiln and were seemingly exotic. There were other fragments from this site in different strata of this thin sectioned kaolin ware.

Pottery from the last significant layer 2 disclosed, in addition to the continuance of rich red ware tradition vessels and use of nozzles, the existence of a somewhat refined pottery tradition in red ware with a firm cream coloured slip as revealed in a shallow lid variety with a carefully prepared ridge and flanged rim. Both the interior and exterior were treated with slip. Of the consistently seen examples in ordinary red ware, flaring shallow lid-cum-dish, with a central ridged receptacle, with varying rim forms; deep jars of thick fabric with bud-shaped rim externally grooved and nail-lifted incisions; globular water vessels with top grooved and beaded rim and multiple incised lines; carinated deep bowl varieties internally ledged and externally collared; plain incurved and thickened rim lids or out turned forms. Specimens of lug grips for shallow basin, as well as loop handles, both of grey ware, flat-bottomed bowls occasionally with a circular button like ridge at the inner bottom and with creamy slip on the interior; and thick hand-made storage jars, continued to prevail. The profuse occurrence of nozzle types seemingly suggest their ritual use, both under Buddhism and Hinduism.

This top level 1 below humus showed a dominance of deep-bodied and elliptical storage jars of thick to medium section variously of inturned or thickened rim and external collar; and the continuance of shallow dish varieties of grey and red wares. Carinated pots showed a dominance of shallow and out turned neck with flat and externally sharpened rim or sliced or grooved kind. There were also a variety of medium sized deep bowls with everted and beaded rim with blunt and mild shoulders. Globular vessels, internally ledged rims of various kinds were also notable. Red wares

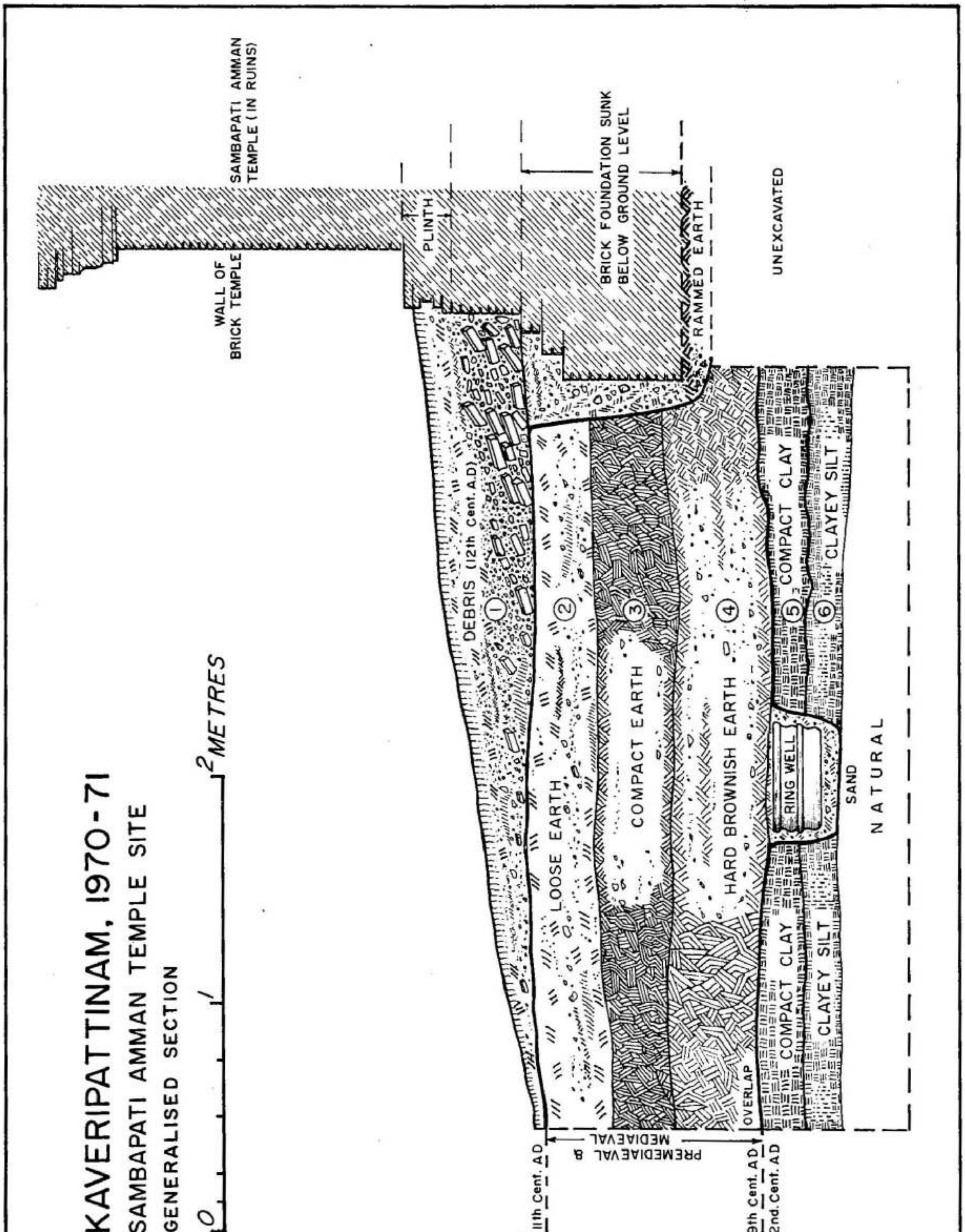

KAVERIPATTINAM, 1970-71
SAMBAPATI AMMAN TEMPLE SITE
GENERALISED SECTION
0
1
2 METRES
SAMBAPATI AMMAN TEMPLE (IN RUINS)
WALL OF BRICK TEMPLE
PLINTH
BRICK FOUNDATION SUNK BELOW GROUND LEVEL
RAMMED EARTH
UNEXCAVATED
DEBRIS (12th Cent. A.D.)
1
LOOSE EARTH
2
COMPACT EARTH
3
HARD BROWNISH EARTH
4
COMPACT CLAY
5
CLAYEY SILT
6
RING WELL
SAND
NATURAL
OVERLAP
MEDIAEVAL
PREMEDIAEVAL B
11th Cent. AD
9th Cent. AD
2nd. Cent. AD

FIG. 39

were in greater proportion to grey wares. Socketed and ridged lid types with self-slip occurred. Some of these without the central socket appear to have been used as lamps also. Streaks of slip for decoration of the exterior were continuing. Diminutive vessels of grey ware with a variety of rims and lid varieties in these sizes were also noticed.

The general trend showed that upto but excluding the top layer consistency of usage was maintained, with Vijayanagar and even Setupati coins picked up from the topmost level (almost as surface finds) leading one to presume that after the twelfth century, it was a period of decline of life here and the continuance, by shift of importance to other parts of this Chola territory in the Kaveri Valley, consequent upon political changes and shift of the Chola capital from Thanjavur to Gangaikondacholapuram in early mid-eleventh century A.D. by Rajendra Chola-I and later to Madurai in mid-late thirteenth century occupation of the area under the second Pandyan empire.

6. SAMBAPATI AMMAN TEMPLE SITE.— Sambapati Amman temple site is not far southwards from the Buddha Vihara site of Pallavanisvaram at Kaveripattinam and was taken up for excavation with limited objective of its underlying structural phases, if any, and the strata below the temple, above the virgin soil (pls. XVII and XVIII).

Sambapati Amman has been referred to in *Manimekhalai* (the Tamil classic the sequel to *Silappadikaram* and taken to be of the post-Sangam period), as the guardian deity of Kaveripattinam. The existing temple had indications mainly of the early mediaevel times, although claims have been made by scholars that this temple site referred to, as it was, in the work '*Manimekhalai*' should have pertained to about the eighth-ninth century A.D. The work at this site did not, however, reveal any early historic phase for the temple construction or related to the existing temple which was not earlier than the early Chola times around the tenth century A.D. in which this temple should have been built as indicated by a foundational multi-coursed phase and the upper main temple built with moulded bricks. The latter is in consonance with the stone temple structure of the coeval period of the eleventh-twelfth century A.D.

Excavation at the site has thrown some interesting light on the method of construction of the brick temples of those times (fig. 39). An earthen platform was first raised to a height of one metre on the natural sandy soil, by ramming hard gravel and earth. Over this platform, a regular brick-bat platform, laid in three courses, was erected in the central part. Above this brick-bat platform, the temple proper was constructed, its basal preparation comprising thirteen courses of well burnt brick-of which as many as eight courses formed the foundation of the temple, together with the three brick bat courses above the earthen platform. Thus, five courses formed the *adhisthana* proper of the early temple. The temple structure, whenever it was calling for repairs, was built entirely with moulded bricks subsequently, many of the architectural parts revealing known elements of architectural style of the Cholas of the eleventh-twelfth century A.D. There is no earlier stratum, however, below the temple foundations revealing the ring well which is clearly predating the first phase of the temple which is correlatable to the bottom of layer 5 of the Vellayan Iruppu-II site as a whole, and placeable

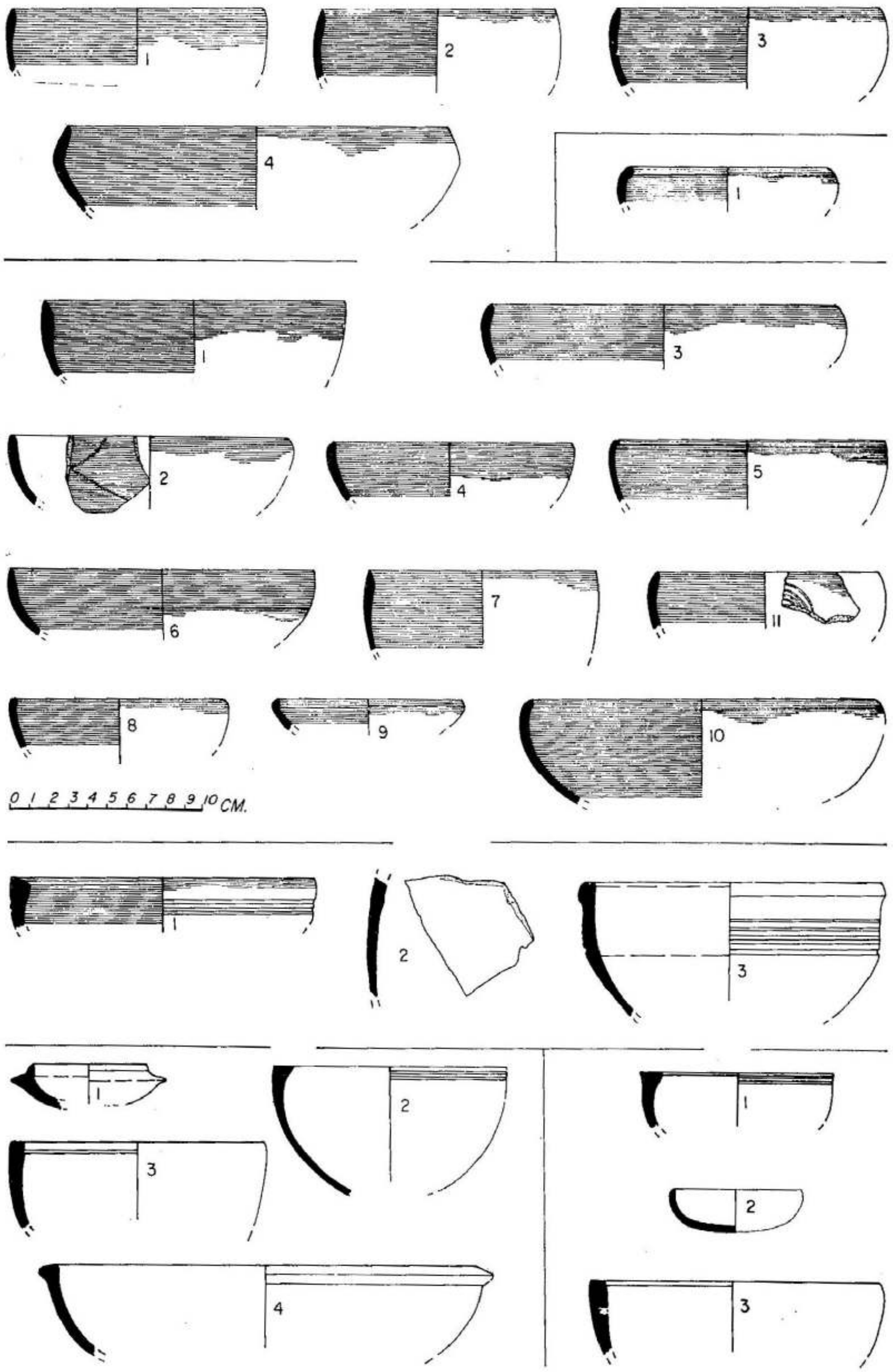


FIG. 13. *Black and red and black ware*

in the overlap of the pre-Raja Raja I phase of the early Cholas with the early historical stage, at this site. Thus, an early historic horizon for the Sambapati Amman temple can be inferred, without any temple estiges.

A votive tank of burnt bricks, many broken terracotta horse effigies of diminutive sizes, perhaps, as offerings, were also found very close to the foundational brick platform of the early phase and these might relate to the consecration ceremonies performed at this temple, during the construction.

Pottery on the whole is wheel turned, medium thick, well burnt and of unslipped red wares. Red ware bowl with slightly out turned, beaded rim and grooved shoulder conspicuous by its presence, in profusion and in variety. Vase with excurved rim, externally collared, short neck, externally grooved in between neck and the oblique shoulder with its variants, are also available.

These compare well with the pottery from Vellayan Iruppu-II. The site is poor in habitational antiquities, by its very nature, but mention may be made of a long-barrel roughly circular sectioned bead in chalcedony, flat barrel shaped bead in brown jasper, and short-barrel circular bead in green jasper. It was apparently part of some private individuals having visited the place and having dropped there these beads by accident. All these pottery and antiquities are thus variously of the period approximately between tenth-twelfth century A.D.

The ring well vestiges cut into the natural soil also, from the early historic level, might show that this site was perhaps located in the periphery of the town, as ring wells are generally distributed along the periphery of habitation sites, throughout India, in the early historic sites, serving perhaps as garbage bins for the town. By this token, the temple site was also to be deemed as on the boundary of the port-town.

The importance of Sambapati Amman temple (and this excavated site) stems from the fact of its close association with Kaveripattinam, on religious grounds, as narrated in *Manimekhalai* epic - which was the sequel story to *Silappadikaram*, whose original event (though not the text, as we have it now) should have taken place in the early historic times, of Roman trade with this port-town and by the stratigraphy of the temple site, seems to support this early mediaeval temple as having followed the *Manimekhalai* reference or being close to it in the mediaeval times and perhaps having had a more modest temple in the early historic hints around second third-century A.D. somewhere close by.

BLACK AND RED WARE AND BLACK WARE TYPES (fig. 13)

Kilayur

1. A dish with mildly incurved, internally thickened body and blunt pointed rim. Layer 5.
2. Dish with thicker, prominently incurved and internally sharpened rim. Layer 5.
3. Dish with well incurved body and slightly internally straightened and blunt rim, leading to a rounded base. Layer 5.

4. Dish with boldly inturned and blunted carinated shoulder and internally blunt pointed rim, and a sloping body towards the rounded base. Layer 4.

Vanagiri

1. Dish with prominently internally thickened and outcurved and sharpened rim, with a straight and tapering lower body. Layer 3.
2. Dish with almost straight rim, smoothly curving body, internally heavier and very blunt everted rim. It has two internally picked converging lines for rim and lower part. Layer 3.
3. Dish with incurved and blunted rim and deepening rounded base. Layer 3.
4. Bowl of incurved and deepening base and blunted rim. Layer 3.
5. Incurved thin deep bowl with internally chamfered rim. Layer 2.
6. Slightly shallow dish with incurved and internally thickened and sharpened rim. Layer 2.
7. Incurved deep dish or bowl with boldly internally thickened and chamfered like sharpening for the inner rim. Layer 2.
8. Thin shallow dish of medium and small size with incurved and flattened rim. Layer 2.
9. Small shallow dish with sharply inturned and thickened rim, and sloping body. Layer 2.
10. Dish with smoothly incurved and blunted rim and upper body, tapering to a shallow base. Layer 1.
11. Dish with prominently inturned and internally narrowing and sharpened rim. Its exterior has some engraved designs. Layer 1.

Vellayan Iruppu - II

1. Rimless sherd, probably a bowl, out of context here, on top level. Internally chamfered and thickened bowl with grooved collar. Out of context here, on topmost level.
2. Rimless sherd, probably a bowl, out of context here, on top level.
3. Black and red ware-a deep bowl with top grooved internally straight on externally beaded rim blunt, curved, grooved and tapering body out of context. Layer 1.

Manigramam

1. Dish with a prominently incurved and blunt rounded rim tapering to a slightly deep rounded base. Layer 3.

All black ware

Manigramam

1. Dish-cum-lid type with incurved sharpened rim and a thick prominently sharpened flange and tapering thick base. Layer 2.
2. Rounded deep bowl with hemispherical body, almost straight outer rim, widely and smoothly flattened at the top, leading to a prominently incurved inner rim. Layer 2.
3. Deep bowl with almost steep sides, straight rim internally thickened and flattened on the top. Layer 2.
4. Shallow medium sized dish with a rounded tapering body rim incurved internally and bluntly chamfered and beaded externally, almost like a nail head. Seemingly patterned after the typical chamfering of a 'Rouletted' ware dish though slightly modified. Layer 2.

Vellayan Iruppu-II

1. Small deep bowl with everted and internally thickened and widely flat top. A variant of type 3 of Manigramam, above. Seemingly out of stratigraphic context here. Layer 1.
2. Small ring like lid-cum-bowl with thickened body. Seemingly out of context here. Layer 1.
3. Deep bowl with thick and flat topped rim, slightly thickened internally. A variant of type 3 above.

Grey Ware (fig. 14)

Vanagiri

1. Deep bowl with reducing lower profile and an externally thickened and flat topped rim, internally excurved; seemingly following the black ware type 3, of Vanagiri above.

2-3. Similar to the above and with an externally beaded incurved rimmed lid-cum-dish, externally thickened and tapering undulating body. Layer 1

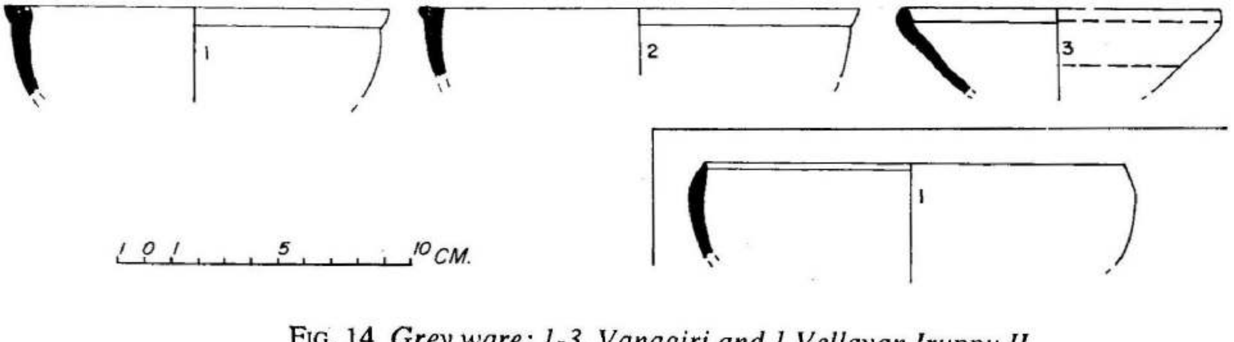


FIG. 14 *Grey ware: 1-3, Vanagiri and 1, Vellayan Iruppu II*

Vellayan Iruppu

1. Internally straight and sharpened and externally thickened and curved rim with a steep, perhaps lying on the horizon of lowest occupation, out of context, and perhaps may belong to Pallavanisvaram Buddhist temple (2nd phase) nearby.

   It is a variant of a Black and red ware type.

RED WARES AND OTHER PLAIN WARES (fig. 15)

Manigramam

1. A lid-cum-dish variety with an internally thickened and everted and externally thick slopy, flanged rim, narrowing down to a shallow base. Layer 3.
2. Neck of a pot with a flaring blunted and rounded rim on the inner neck and externally flanged, collared and widening to a possible globular body. Layer 3.
3. A dish-cum-shallow bowl with an internally chamfered and externally clubbed like a nail head rim, with slightly widening neck and externally weakly ledged and thickened shoulder leading to flattish base. Layer 2.

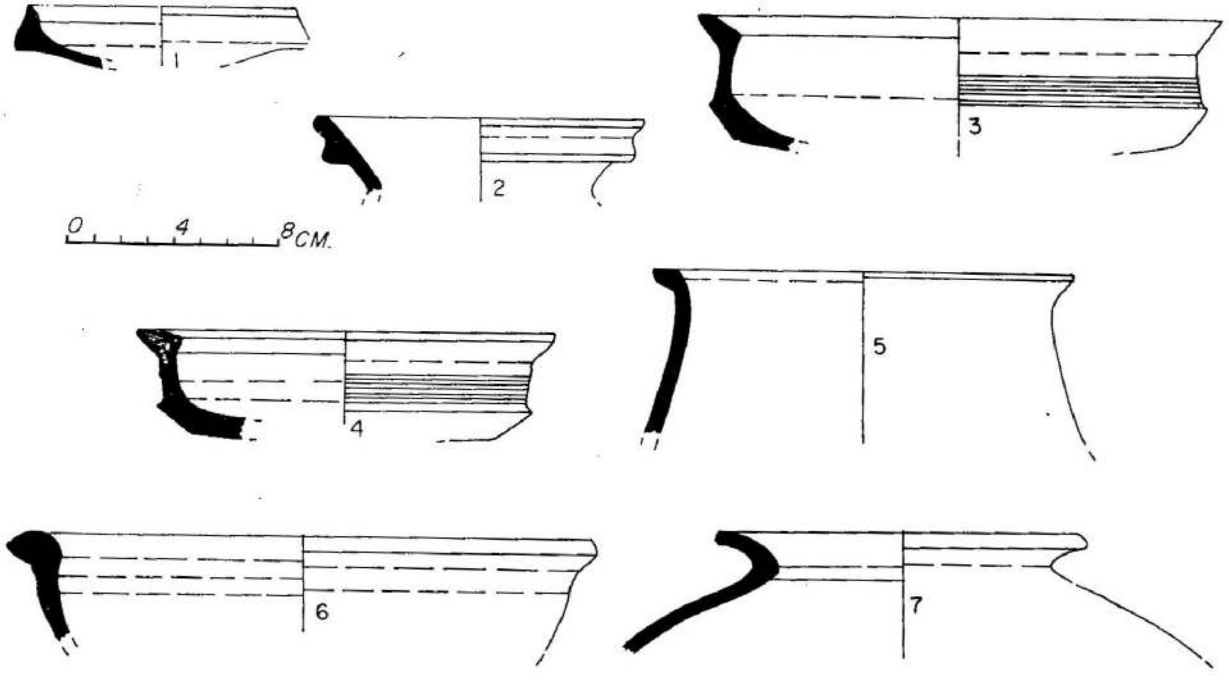


FIG. 15 *Red ware: 1-3, Manigramam and 4-7, Kilayur*

Kilayur

4. A variant of the above with a thick clubbed rim, somewhat straightish neck with weak rib and a series of weak grooves, a sharp flange of carination and thick flattish base. Layer 2.
5. A wide-mouthed vessel with deep outwardly tapering body, a horizontally thickened and pulled out beaded rim, and a mild internally curved section. Layer 2.
6. A bowl with a curved everted and heavily clubbed pointed rim and tapering sides, with internal and external grooves on the neck, below the rim. Layer 1.
7. Water vessel with a flaring externally vertically chamfered rim sharply widening at the neck into a globular body. Layer 1.

Vanagiri (fig. 16, 1-11a)

1. A jar type of wide mouth and smoothly incurved and internally pulled out and thickened rim. Layer 2.
2. A wide mouthed jar with incurved and horizontally flat topped and internally beaded rim. Layer 2.
3. A vase with a flared everted and pointed rim and a smoothly tapering thickened body and probably a flattish base. Layer 2:
4. A large sized vase with an inturned and prominently internally clubbed rim with sharp taper from the rim of thick fabric. Layer 1.
5. A deepish wide mouthed vase with a well everted and externally rounded drooping rim, an internally carinated narrow neck and a steep body. Layer 1.
6. An interesting vase with a top grooved and thickened rim slightly everted and with a widely tapering body. On the exterior from the rim downwards an applique decoration of a cobra (*naga*) had been very realistically fixed with stippling for the inner hood and projecting mouth. Layer 1.
7. A vase with a straight thin featureless rim, sharp carination leading to a tapering base. Layer 1.
8. A carinated bowl with a flaring and externally curved blunt rim; sharp carination at the neck as well as below its widening shoulder, leading to a rounded base. Layer 1.
9. A storage vessel with an everted, thickened and externally beaded rim and widening body. Layer 1.
10. A small vessel of everted featureless rim, narrow neck and widening thin sectioned body. Layer 1.
11. A lid-cum-dish type with an everted rim, a boldly carinated projecting and recurved shoulder and a concave tapering flattish base. Layer 1.

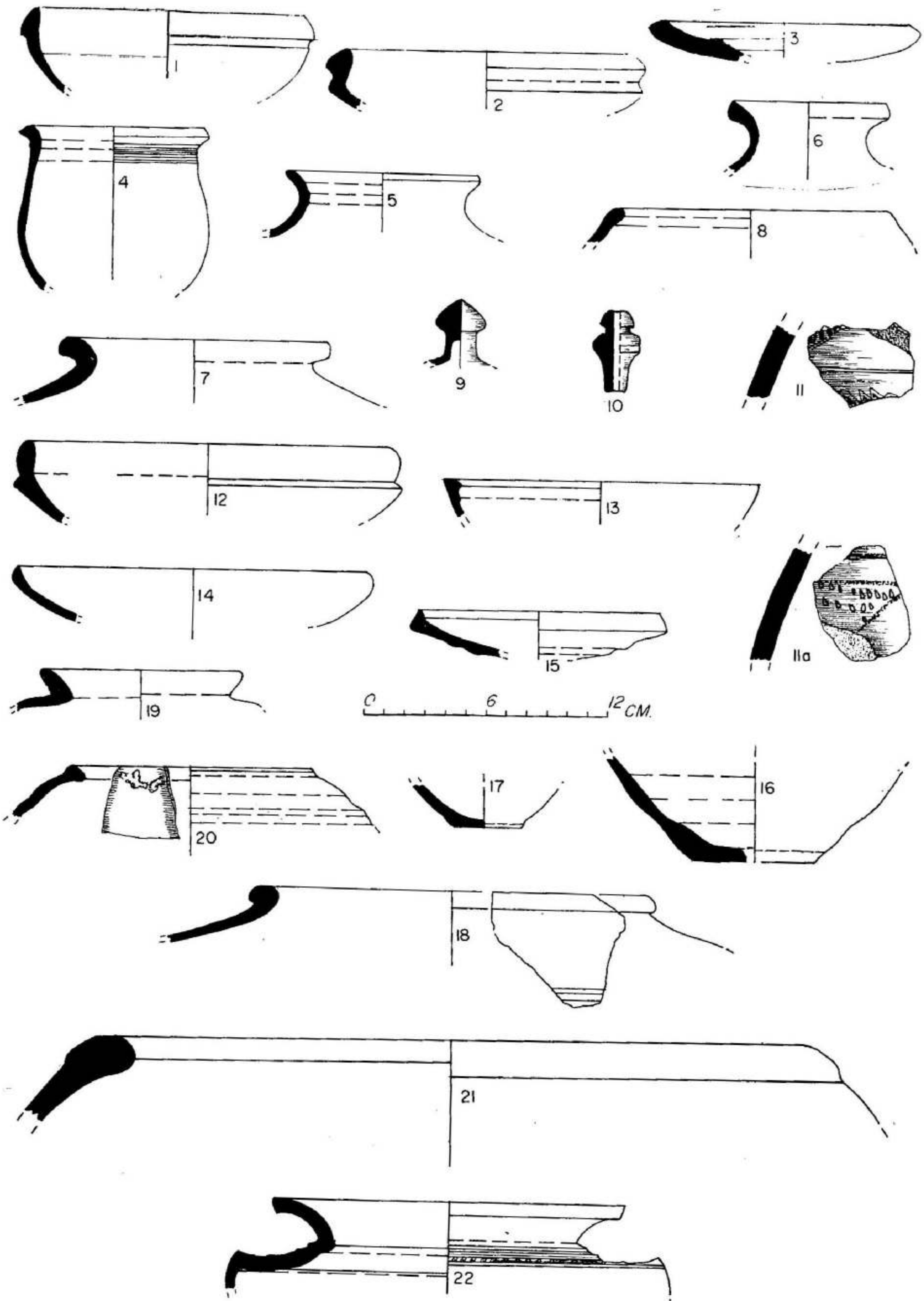


FIG. 16. *Red ware: 1-11a, from Vanagiri and 12-22, Manigramam*

11a. A thick shoulder piece with two lines of sharp short slashes in irregular parallel formation.

Manigramam (fig. 16. 12-22)

12. Dish with vertically pointed, externally drooping and undercut rim and tapering rounded body. It follows the tradition of the 'Rouletted' ware and other early historic dish types. Layer 2.
13. A shallow dish-cum-lid with a slightly inturned, externally slopy and thickened rim narrow, grooved neck and sharply carinated and tapering flattish base. Layer 2.
14. Dish-cum-lid with a widely flaring and internally thickened and externally clubbed rim with a prominent ledge on its inner body and of a rounded shallow base. This forms a popular variant of the early historic lid types. Layer 2.
15. A gourd type of deep bowl with an everted and externally chamfered and sharpened rim, beaded neck under the rim and steep sides curving to a rounded base. It has multiple grooves its upper neck on the exterior. Layer 1.
16. A storage vessel of thin ware with a flaring featureless rim well curved narrow and internally grooved neck and widening body profile. Layer 2.
17. A narrow mouthed water vessel with well everted and flaring rim, externally drooping, with sharp rim top, well curved neck and widening body, of thin section. Layer 1.
18. A water vessel with thick horizontally flaring and clubbed rim and widely expanding body. Layer 1.
19. A jar with narrowing and internally pulled out rim with flattish top, and widening body profile. Layer 1.
20. A knobbed lid piece showing bud-shaped solid knob with a ring, shallow neck and widening body. This is part of the types going into red polished wares like sprinklers etc. of this knob type. Layer 1.
21. A spout or nozzle piece of a storage vessel with a drooping shoulder top grooved neck and slightly widening thick beaded lower stage narrowing to the point of its luting with the main vessel. Layer 1.
22. A decorated thick sherd of red ware with two zones of decorations by incised design comprising slashes within a border above the shoulder groove; a multi-petalled lip in the low zone. Layer 1.

Pallavanesvaram (pls. XXI-XXII; figs. 17-18)

1. A typical 'Kushan sprinkler' variety with a well formed shoulder for the globular body, a high neck flaring out into an inner central channel depression within which the nozzle rises in conical shape containing the very narrow channel opening. A diagnostic index of the early historic period and for the impact of upper Indian traditions coming here from the Satavahana sites of the Deccan. From layer 5.

POTTERY

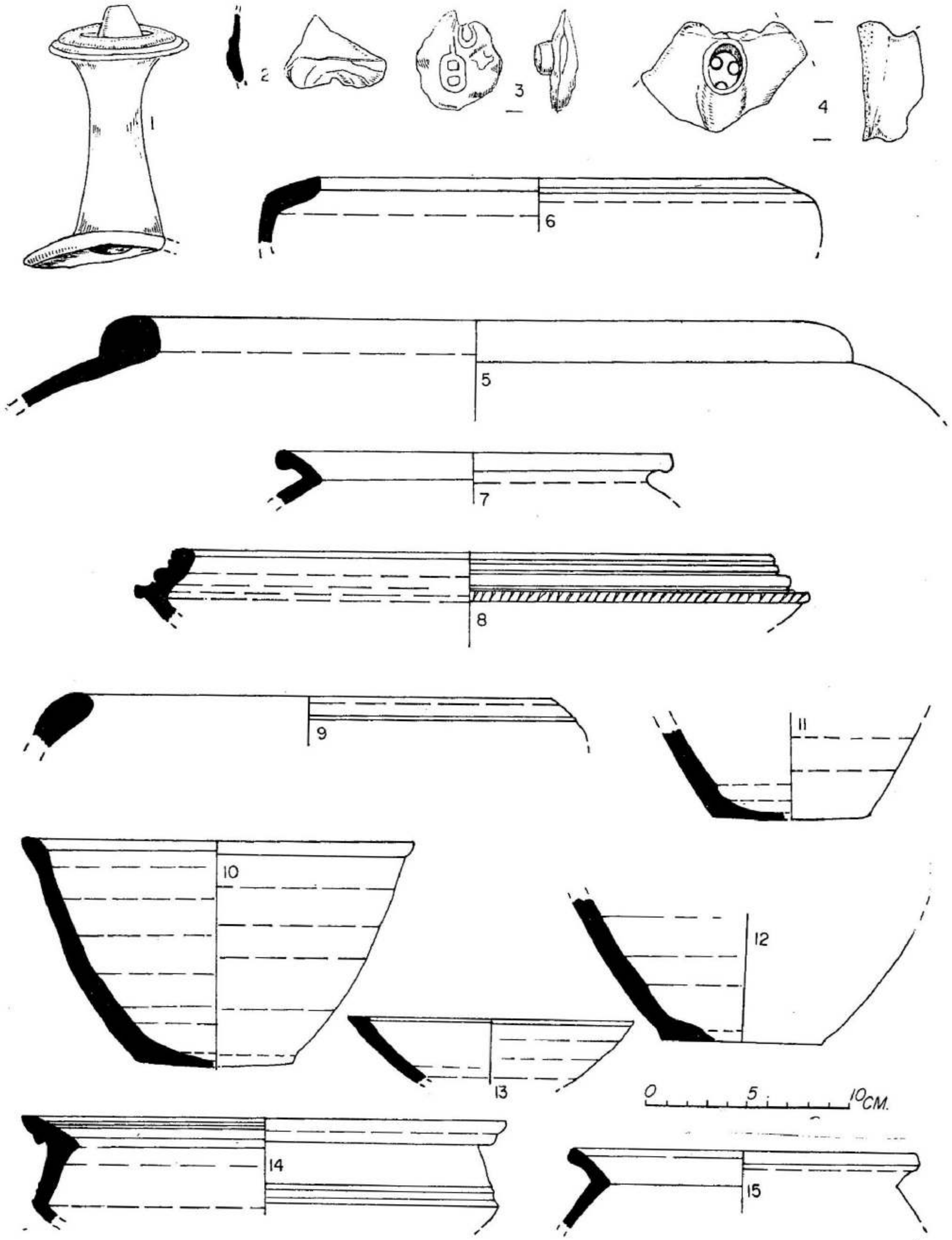
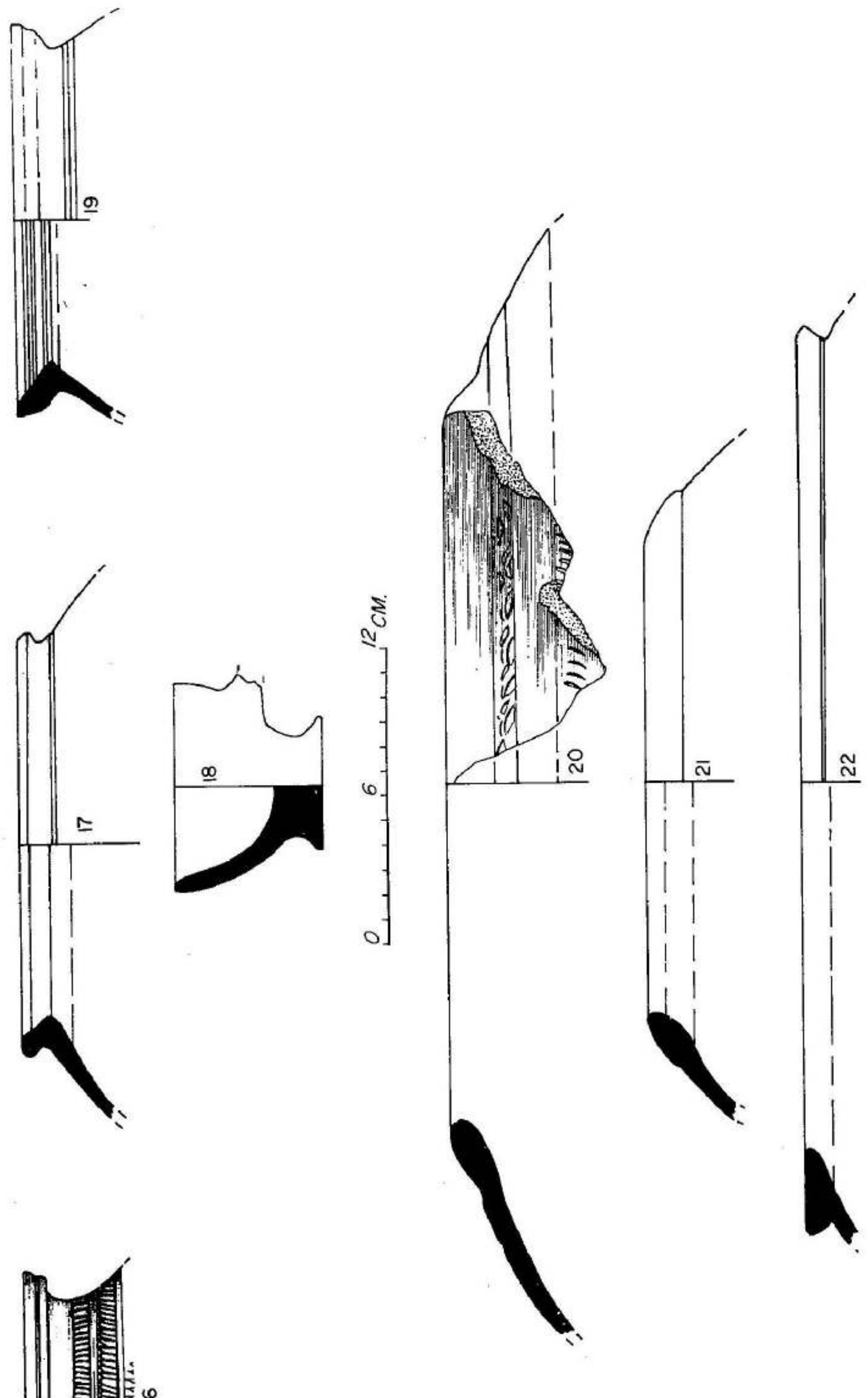


FIG. 17. *Pottery from Pallavanesvaram*

2. A fragment of the shoulder at which the strap handle of the variant Kushan sprinkler type is luted. From layer 4.
3. Terracotta nozzle fragment with a short spout projection with two perforations within it and some applique decoration around. Fine red ware of the same class as above. From layer 4.
4. A characteristic lower end of a spouted jar with an oval triple-perforated and prominently ridged encasing where it would have been luted to the spout and a bulging slopy lower profile. Part of a sprinkler variety. From layer 3.
5. A large jar of red ware with a boldly inturned rim, heavily thickened inside and rounded on the exterior. It has a widening body. From layer 4.
6. A jar of red ware with steep vertical body and sharply inturned and internally thickened and curved pointed rim. It has grooves on the exterior and on the interior below the rim. Layer 4.
7. A carinated red ware with flaring out-turned and internally sharp necked rim of externally beaded and undercut from and widening body. From layer 4.
8. A carinated and externally flanged shallow bowl of medium to largish size with blunt flattened rim externally grooved and beaded in two ledges leading to the blunt projecting flange. Heavily grooved on the exterior and on its mildly outward curved interior body. The exterior on the flange face is also decorated by oblique inclined slashes. From layer 4.
9. A blunted incurved and pulled out rim fragment of jar widening to a convex body. Grooves on the exterior under the rim. From layer 4.
10. A red ware, flat bottomed bowl with heavily thickened lower walls, except the base which widen upwards and flare out into an externally thickened, top flattened and internally mildly chamfered rim. The interior is grooved at regular intervals from top to bottom. From layer 2.
11. Lower fragment of a flat bottomed bowl with flaring sides similarly to 10 above, with a prominent interior grooves and depressed receptacle at the base. From layer 2.
12. Another lower fragment similar to 10 and 11 above, with a button base and slightly larger than the other two. From layer 2.
13. A slightly deepish lid-cum-dish type with a slightly externally clubbed and flat-topped rim and tapering body. From layer 2.
14. A dainty bowl with a sharply carinated neck and externally flaring mouth and externally grooved and sharply undercut collar, widening in its body to a blunt carinated waist, grooved twice above it externally and tapering to a rounded base. Heavily grooved internally and externally at rim and carination. From layer 2.
15. A less than medium size bowl probably carinated at the waist and otherwise with a flaring externally thickened rim. Similar to 6 above. From layer 2.



Pottery types from Pallavanesvaram

16. A narrow mouthed jar with a sharply flaring out-turned neck and with externally rounded and grooved drooping collar, sharply undercut and with a widening body profile. The exterior shoulder is decorated with a continuous applique band in double rows within two grooves. From layer 2.
17. A water jar with a bluntly flaring short neck, with externally beaded rim and bulging body. From layer 2.
18. An interesting pedestalled cup type with the handle broken, with a blunt featureless rim, slightly narrowing body and a thick solid pedestal base, curving out and flat at the bottom (pl. XXIV A). Since the rim of the cup is not damaged, the vessel was probably an 'incense burner' (so characteristic in the south in temples as 'Dhupakkal'. From layer 2.
19. A deep vessel, perhaps carinated, with sharply flaring neck and sharpened and externally thickened mild collar, heavily grooved on the interior on the neck and mouth and on the shoulder on the exterior. From layer 2.
20. A large sized water jar with an intensely narrowing neck and mouth ending with a thickened and bluntly pulled in rim. In its exterior it is decorated with applique pellets on the slight ledge on the exterior and by oblique slashes on the shoulder below. From layer 2.
21. Smaller size water jar, similar to 20 above but with a leaf-shaped and pointed rim. Weakly grooved on the interior neck. From layer 2.
22. A large and perhaps deepish bowl with a broadly flattened nail-head rim and externally grooved at the neck. From layer 2.

Red wares

Kilayur

1. Shallow lid-cum-dish with a pointed and internally thickened and everted rim externally boldly sloping and thickened to a pointed flange and acutely tapering saggar base. From layer 3.
2. A narrow mouthed pot with flaring neck externally beaded, grooved and horizontally collared rim. It has similar types at Pallavanisvaram layers also. From layer 3.
3. Dish type with an externally clubbed and internally chamfered rim with a sharp inner neck slightly widening shoulder and ledged carinated and thickened waist and flattish base. The shoulder is multi-grooved externally. From layer 2.
4. Similar to the above (2) but with a straight side, ridged in the middle and with a sharp and chamfered ledged carinated waist and thick flattish base. From layer 2.
5. A steep walled deepish jar with externally clubbed and flat topped rim and mild widening of the body profile. From layer 2.

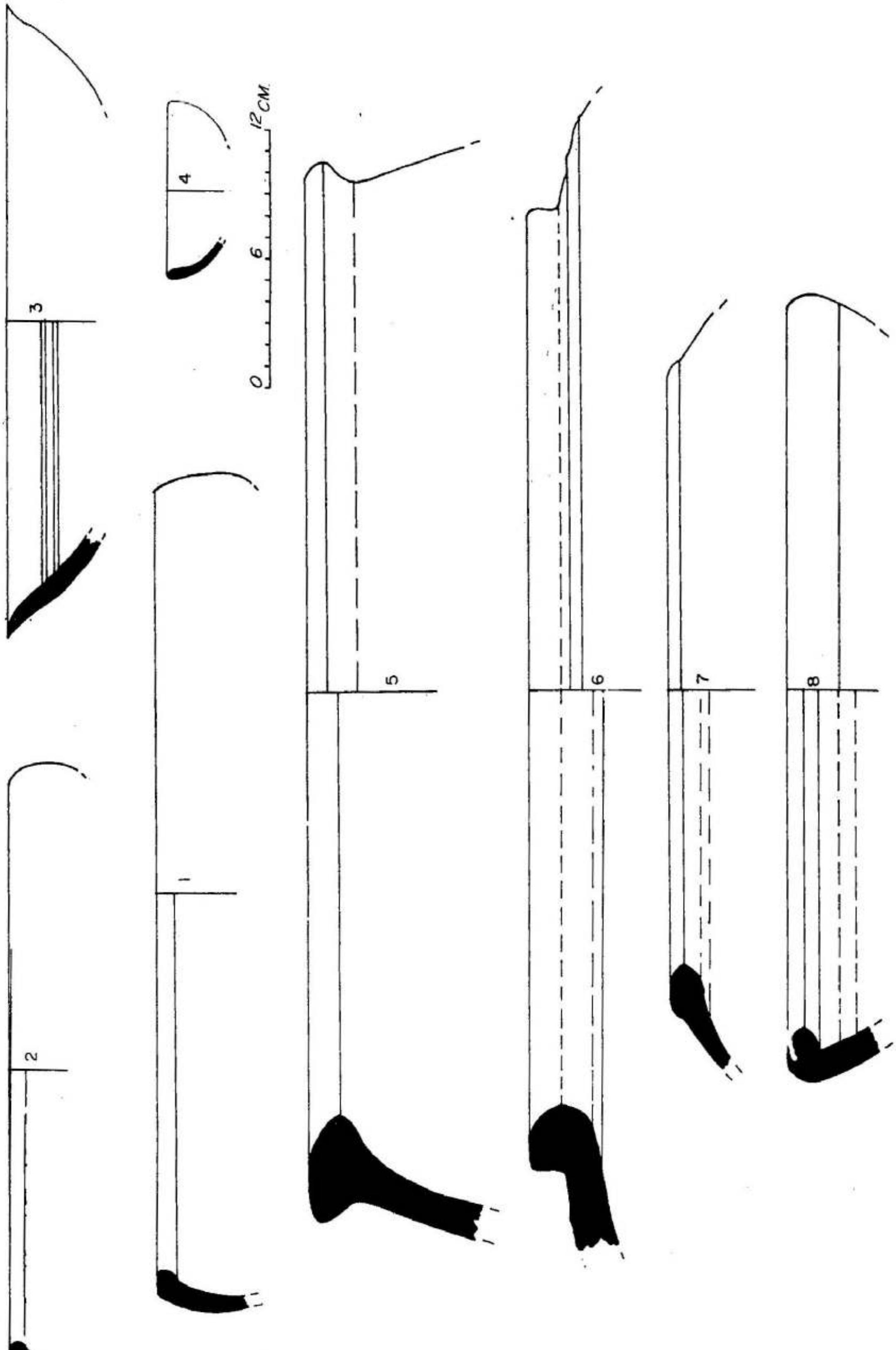


FIG. 19. *Red ware from Vanagiri*

6. A deepish dish with an everted and externally beaded and sharpened rim, with grooves on the exterior and interior neck, tapering to a deepish base. From layer 1.
7. A water jar with a convex flaring neck and externally vertically chamfered rim and widening globular body. From layer 1.

Vanagiri (figs. 19-21)

1. Jar of largish size with incurved and sharpened rim. From layer 2.
2. Similar to the above and of smaller size and with a rather blunted and thickened incurved rim and convex body profile. From layer 2.
3. A large vase with an everted and sharpened rim and tapering thick body. From layer 2.
4. A small dish-cum-lid with featureless thickened rim reducing to a convex shallow base. From layer 2.
5. A large storage jar with heavy rounded and clubbed rim and steep thick profile. From layer 2.
6. A largish storage vessel with blunt and thick everting rim with a prominent ledged shouldered and heavy bulging body. From layer 1.
7. A medium sized jar with closing rounded and thickened rim and widening body. From layer 1.
8. A large vase with boldly incurved and internally clubbed rim and deeply tapering sides. From layer 1.
9. Deep bowl with top grooved and thickened rim and mildly convex interior. On the exterior is provided applique ornamentation of a hooded cobra, seen elsewhere also at this place, in terracotta ornamentation; rendered realistically. From layer 1.
10. A deep bowl with out-turned neck and externally drooping undercut rim and steep, slightly convex body profile. From layer 1.
11. Similar to the above but larger and with a well clubbed and collared rim, curving smoothly to the bulging body. From layer 1.
12. Medium sized pot with well thickened, everted and externally beaded and slightly undercut rim and bulging body. From layer 1.
13. Narrow mouthed water pot with mildly flaring thickened and externally pulled rim and convex neck. From layer 1.
14. Another of the same type with slightly thicker section. From layer 1.
15. A narrow neck pot of thin section, throughout with flaring concave neck and featureless rim and widening shoulder and body. From layer 1.
16. Water pot with sharply flaring thickened neck and featureless rim, no neck and bulging body. From layer 1.

17. A carinated pot with out-turned and collared blunt rim and widening shoulder and sharp carinated waist and rounded base. From layer 1.

18. Bowl with a short straight featureless slightly internally thickened rim, blunted carinated at the waist to a saggar base. This type derives itself from the megalithic milieu. From layer 1.

19. A variant of the above, bowl with a prominent inturned rim slightly thicker than No. 18 and sharply but obtusely carinated to a steep rounded base. Layer 1.

20-27. Are incurved rim bowl archetype and its variant is being either incurved or slightly inturned (21) or blunt featureless (22 & 23) or flat topped (24) rim or obliquely externally chamfered type (25) with a narrowing body and all with a flat base, of which 26 is having a button base 27 is prominently inturned and pulled out almost like a recurved rim with a deep ledge internally. These are similar to type 4 of Kilayur. Layer 1.

28. Is a deep bowl with a nail head rim. Layer 1.

29. Is a slight variant with a convex body, larger size and with a boldly inturned and externally chamfered and collared type. From layer 1.

30-31. Are shallow lid-cum-dish with a slightly incurved (30) or blunt featureless rim and tapering shallow body. From layer 1.

32. Is a deep jar of everted and pulled out and blunted rim smoothly concave neck and convex deep body. Layer 1.

33. Is a smaller narrow mouthed deep bowl with an externally beaded and top-flat rim with a mild neck and a steep body. Layer 1. It has its variant from Vallayan Iruppu-ii Layer 3 also.

34-35. These are lid-cum-dishes with straight blunted featureless rim curving out into a ledged exterior flange more acute in 34 and less in 35, leading to a sagger base. This is a popular early historic type in several parts of the country in excavated sites in red ware.

36. Is a sherd, probably a thin convex part of the body on the exterior of which is engraved the incised figure of a boat shown by two upper lines and a curved lower line connecting the former and with a straight line across vertically at one end, like a pole. Such engravings of a boat on pottery are known even from Mohenjo-daro.

37. Is a button base pedestal of a flaring pot perhaps of the type 26, in which on the interior at the base are picked out the stippled zones of what is in imitation of the Rouletted ware pattern, within concentric bands. Layer 1.

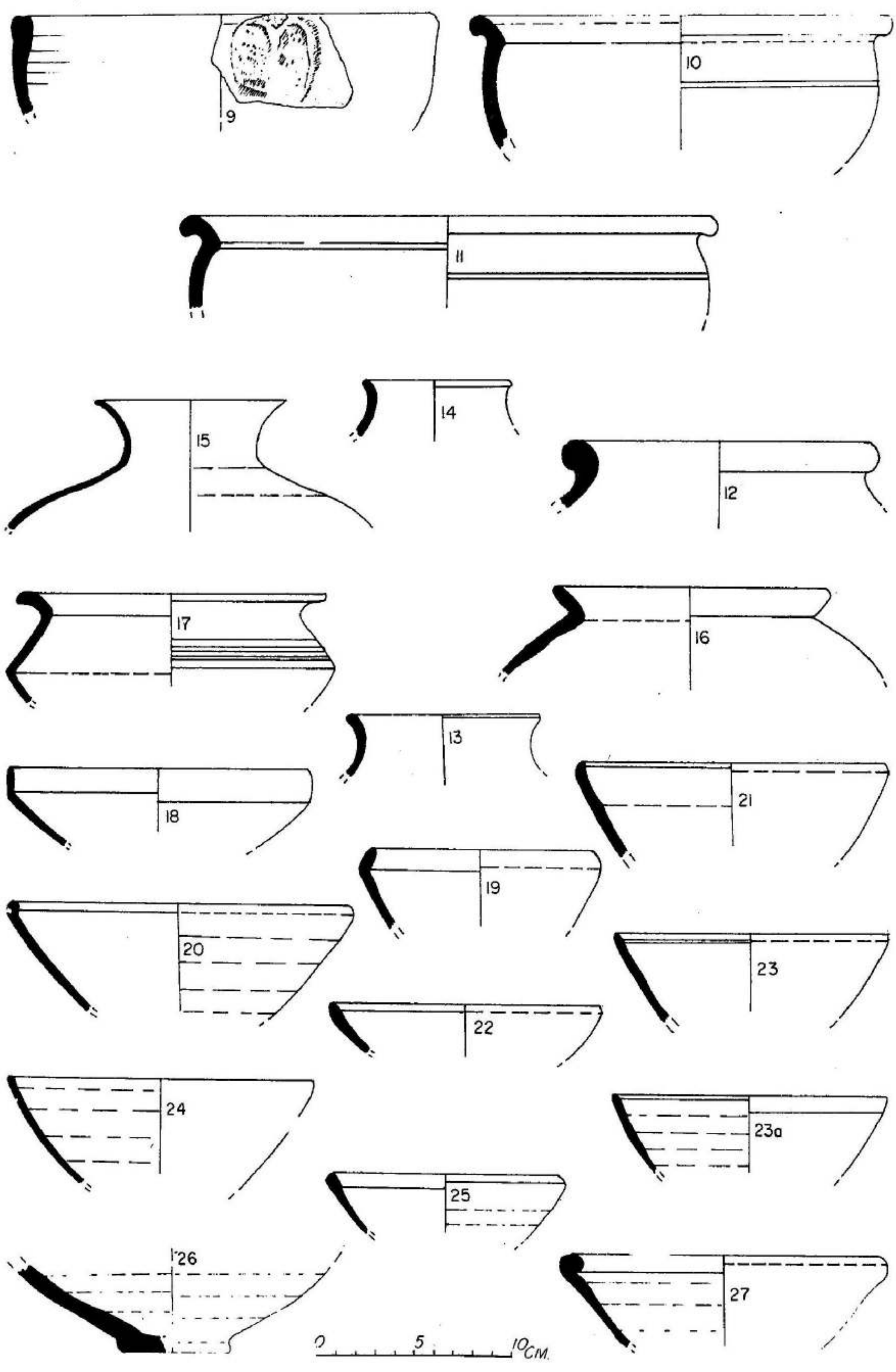


FIG. 20. *Red ware from Vanagiri*

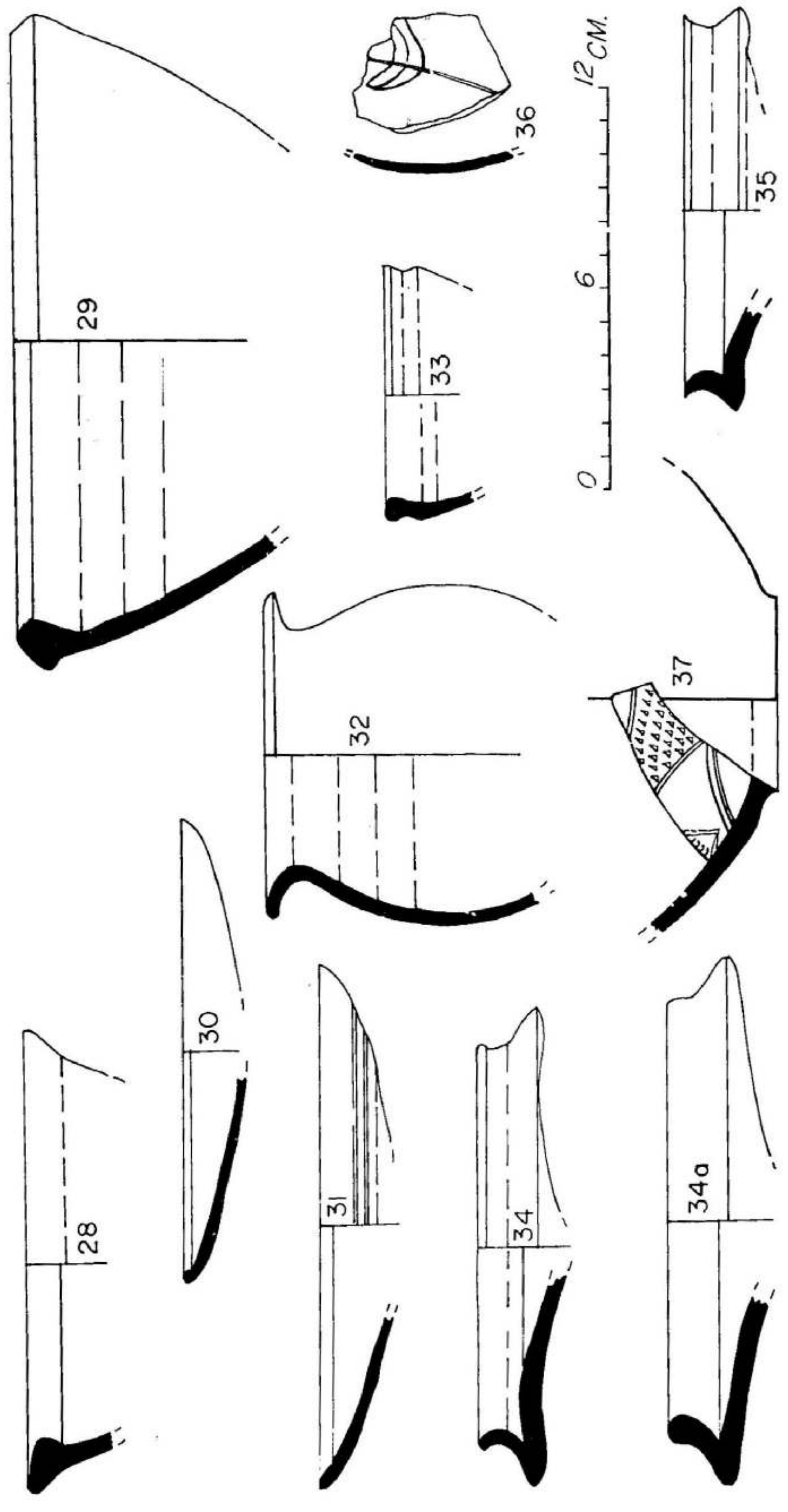


FIG. 21. *Red ware from Vanagiri*

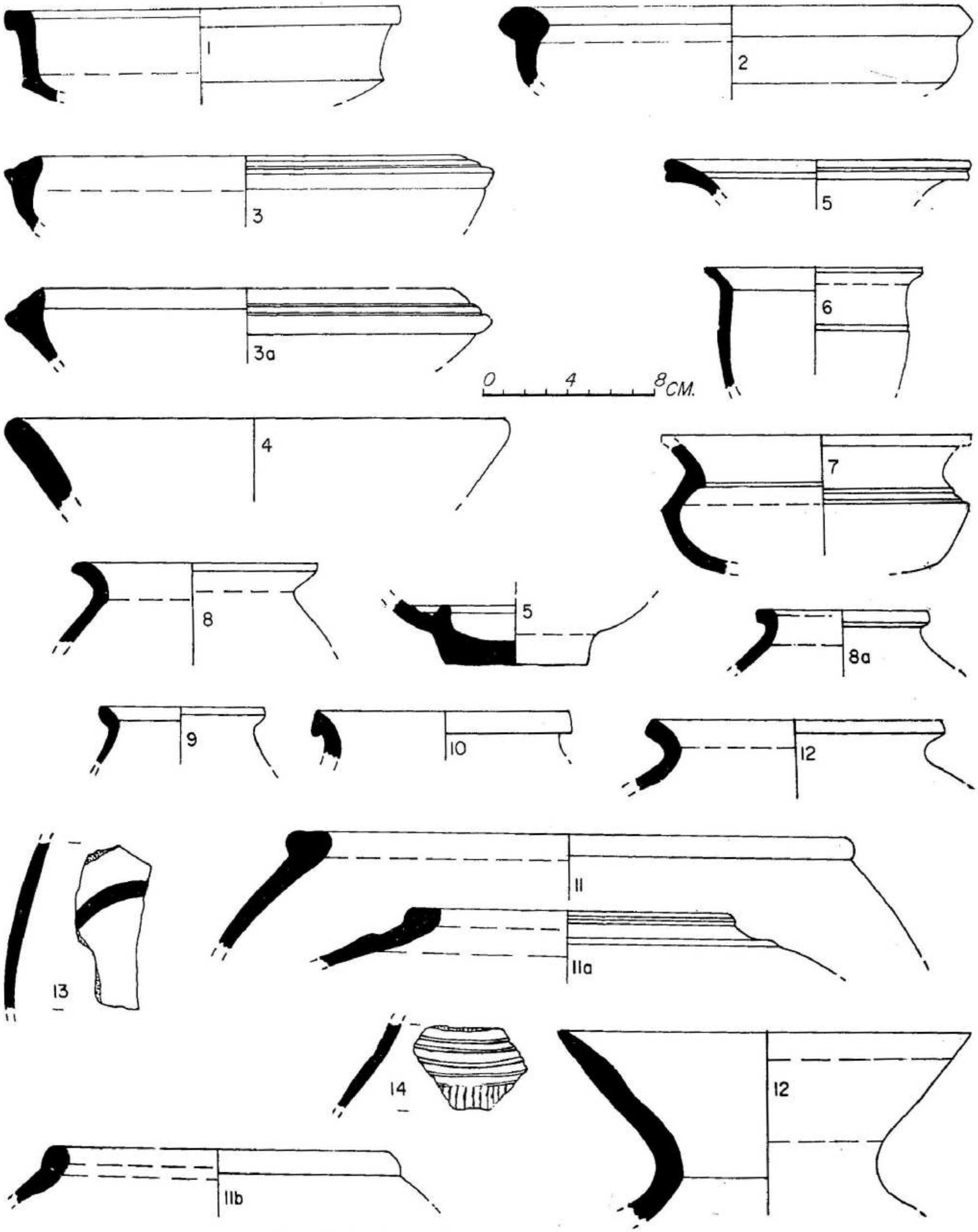


FIG. 22. *Red ware from Vellayan Iruppu II*

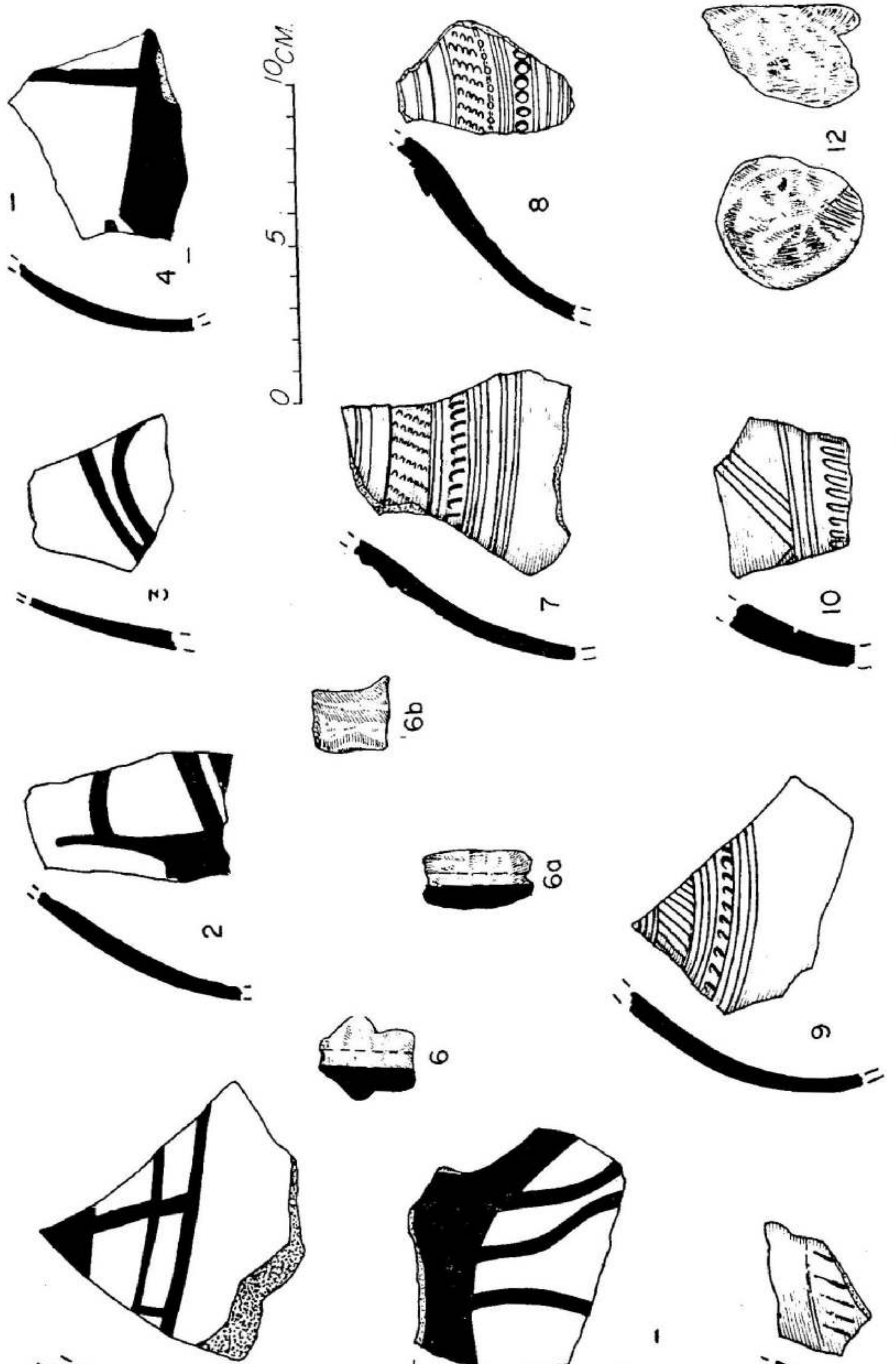


FIG. 23. *Decorated pottery from Vellayan Iruppu II*

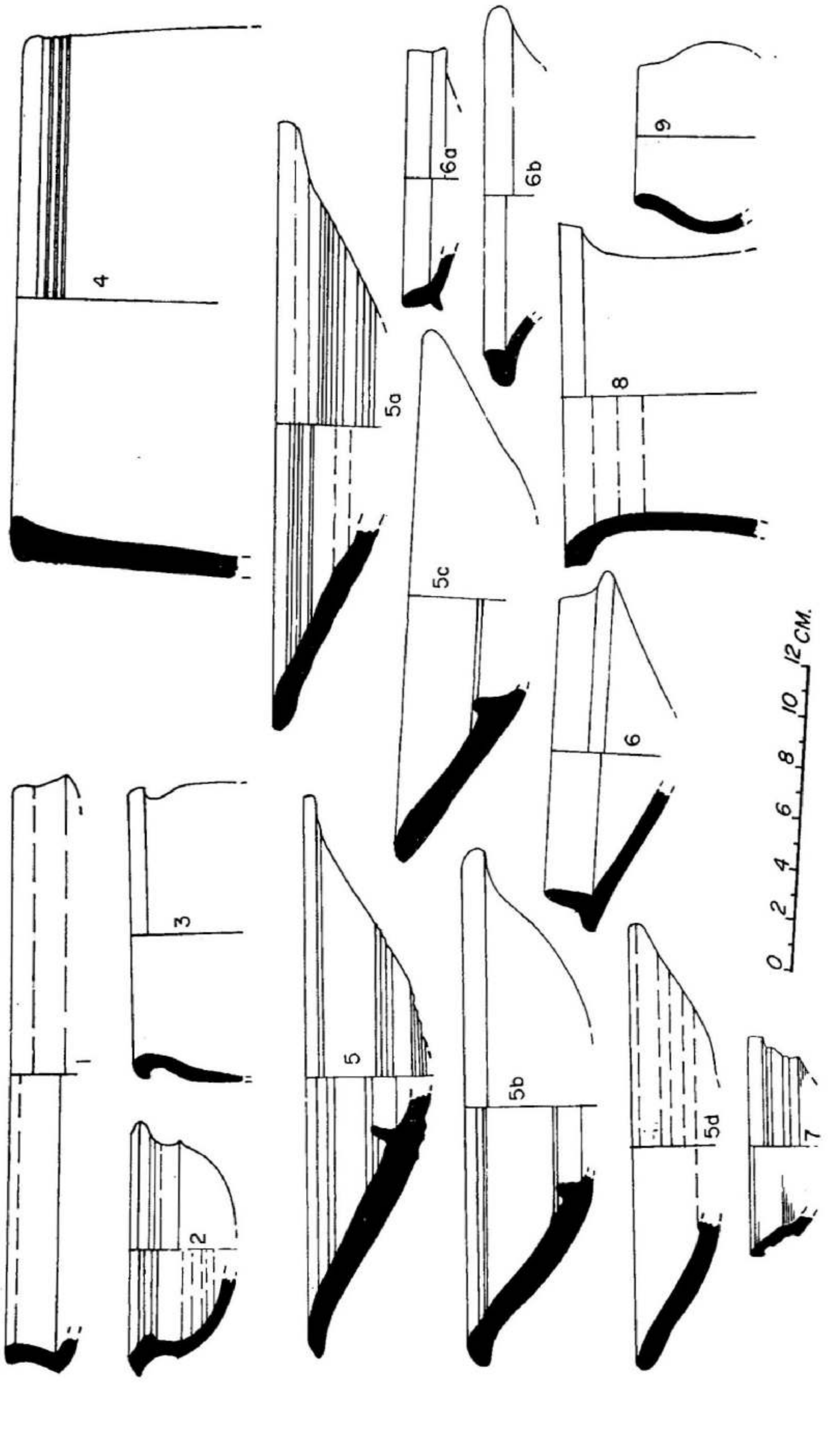


FIG. 24. *Red ware from Vellayan Iruppu II*

common also, but not too frequent. From layer 5.

14. A decorated sherd, part of a shoulder of a pot showing concentric grooves and a lowest grill-like vertical incisions within grooves. From layer 5.

There are interesting decorative sherds in layer 4, particularly one group of three which are green glazed and well fired types with a stone ware core, having designs cut on the body (either of the filled or strokes variety). The exact pattern is not discernible, but concentric strokes with radial lines, or forming enclosed parts or in curves, appear to be common. This pottery appears to be affiliated to the 'green-glazed' pottery jars extensively noticed in the Malaysia and Indonesian Archipelago, as a characteristic ware of the ninth century A.D. and has been studied and displayed in the Institute of Archaeology, Museum, Jakarta. Occurrence of this type at Kaveripattinam gives the first important link with S.E. Asia in this period of the ninth century A.D. much earlier to the occurrence of Celadon and other Chinese affiliated ceramics.

Decorative sherds (fig. 23) are also more common in this layer besides nozzles and spout pieces and a prominent solid pedestalled lid-cum-bowl with a prominent ledge at the interior bottom, above the base.

1. A 'green-glazed' stone ware pottery of even creamy core fabric provided with a green glaze on the body in the form of strokes representing a central solid glazed part and radial and concentric lines around it, executed on the shoulder of a larger jar. It has three variantly designed sherds 2, 3, & 4; the former showing also solid patches and strokes enclosing squarish space, and the latter of straight and curved lines. From layer 4.

5. A pedestal fragment of a deep bowl-cum-lid which has a prominent ledged inner bottom, thick and solid pedestal base. In layer 4.

6. Comprises three fragmentary examples of spout pieces, variously of the conical knobbed type, straight - channelled cylindrical type 6a and shallow half channel type. From layer 4.

7-10 Comprise of a set of five decorated sherds respectively of concentric grooves with two prominent zones of nail-lifted oblique a spiral incursions and a less broad lower hook-like slashes with an opposed slant, another has similar large zone incision but a series of circlets in the lower narrower zone, a third had oblique incised lines filling the larger zones and hooked incisions in the same slant in the lower smaller horizon, and the next being a type which has larger zone decorated by multiple zigzag lines and below two large grooves, a hair pin series is incised. From layer 4; and the last carrying oblique slashes below a circular line.

12. Seems to be applique piece of sunk surface on one side showing the hood detail of a cobra whose mouth is rendered projecting on the outer side, into the protruding mouth and eyes set realistically. It has been already noted that cobra hood applique ornamentation has been

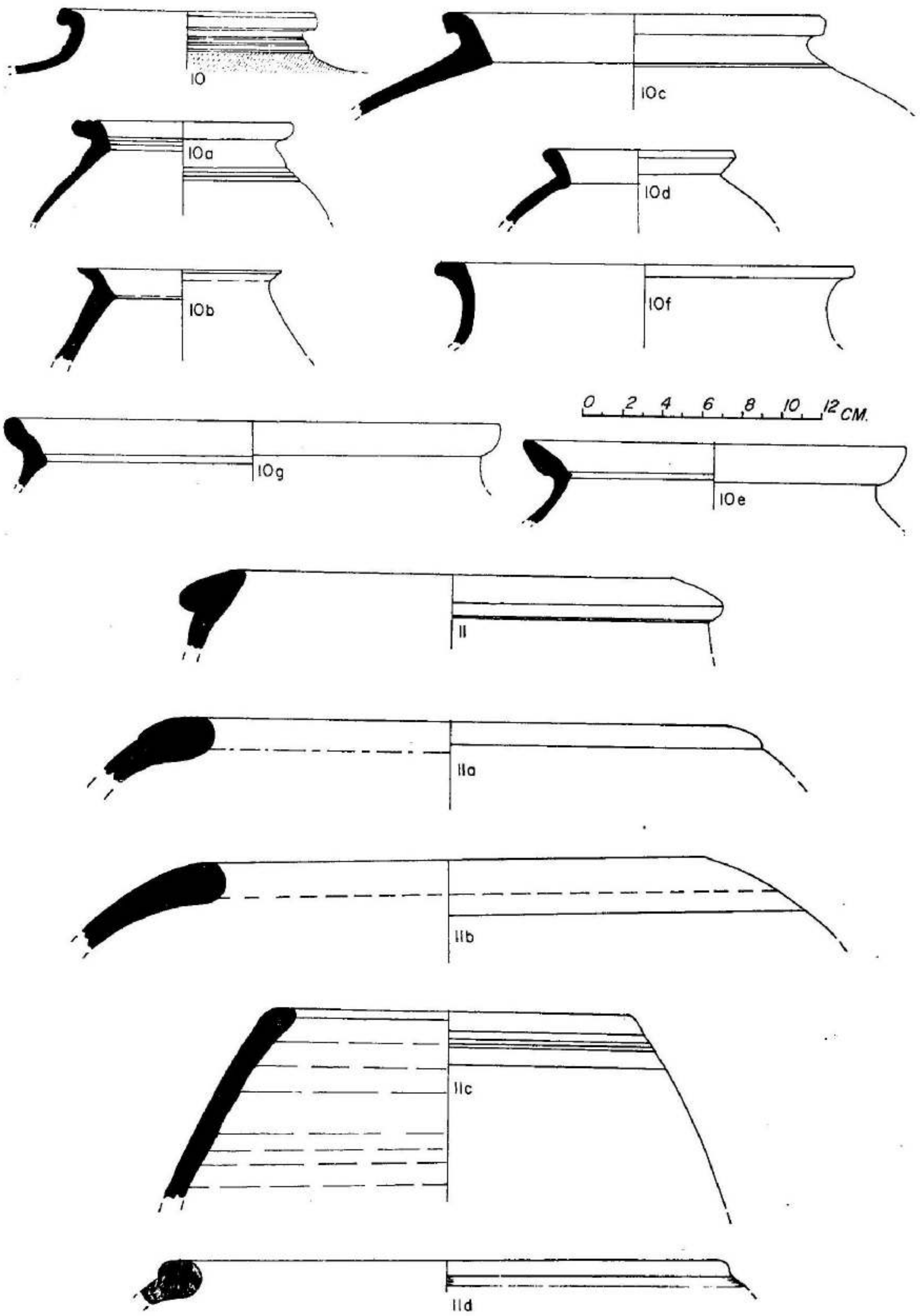


FIG. 25. *Red ware from Vellayan Iruppu II*

noticed at Pallvanisvaram also. From layer 4.

Layer 3 had yielded the largest varieties of pottery types (figs. 24-26) besides spiral types like rings, decorative pottery and one example of the 'green-glazed' type, already noted from layer 4 above.

1. Shallow dish with blunt flat rim slightly concave body and sharply carinated waist and shallow base. Layer 3.
2. Shallow bowl, with internally ledged flaring and thickened and externally chamfered rim, narrow concave neck, a mildly flanged and carinated waist and a smoothly rounded base. From layer 3.
3. Deep bowl with an excurved clubbed and drooping rim with a mildly curved shoulder and straight body profile. Layer 3.
4. A deep jar with slightly incurved, externally thickened and flat topped rim and thick straight side walls. The top exterior below the rim is prominently multi-grooved. From layer 3.
5. Shallow lid-cum-bowl type with a flaring rim and body with a flaring flange at the bottom. There are three to five (broken and unbroken) variants of which two had the flange, broken, the other has a well everted and drooping rim and thick walls and the third of heavy featureless blunt rim and tapering body. From layer 3.
6. Lid-cum-dish type of two sub-types with the archetype having a straight pointed or blunt featureless rim, a prominent outer flange and saggar base. The other variant type has a recurved rim short and pointed and outer flange blunt and thickened. From layer 3.
7. Shallow dish of small size with out-turned and slightly chamfered and drooping rim and a bold ribbing below it leading to a bluntly carinated and shallow base. From layer 3.
8. Deep bowl of medium to large size with an everted and leaf-shaped pointed rim and steep profile. From layer 3.
9. Small vessel with featureless rim and slightly widening convex body. From layer 3.
10. Pot with horizontally pulled out (10) and grooved rim (10a) narrow with mild thickening and widening body, externally and internally multi-grooved. Such flaring necked pots have two variants with flat-topped and sharply flanged inner neck (10b) and horizontally flat and pointed rim (10 c). The other (10 c) has a featureless and externally thickened rim and smooth convex bulging body. Another (10d) variant has an externally collared in and mild internal flange at neck. From layer 3.
11. Is a series of narrow or closing mouthed jars of which the development is from straight flat topped externally beaded rim to oblique nail head rim, sharp and blunt leaf-shaped rim, blunt and flattened upper rim, acutely inward closing rim and featureless internally pulled rim, multi-grooved interior body and exterior below neck, one of the type and features blunt thickened rim has a twisted cord pattern and applique type. From layer 3.

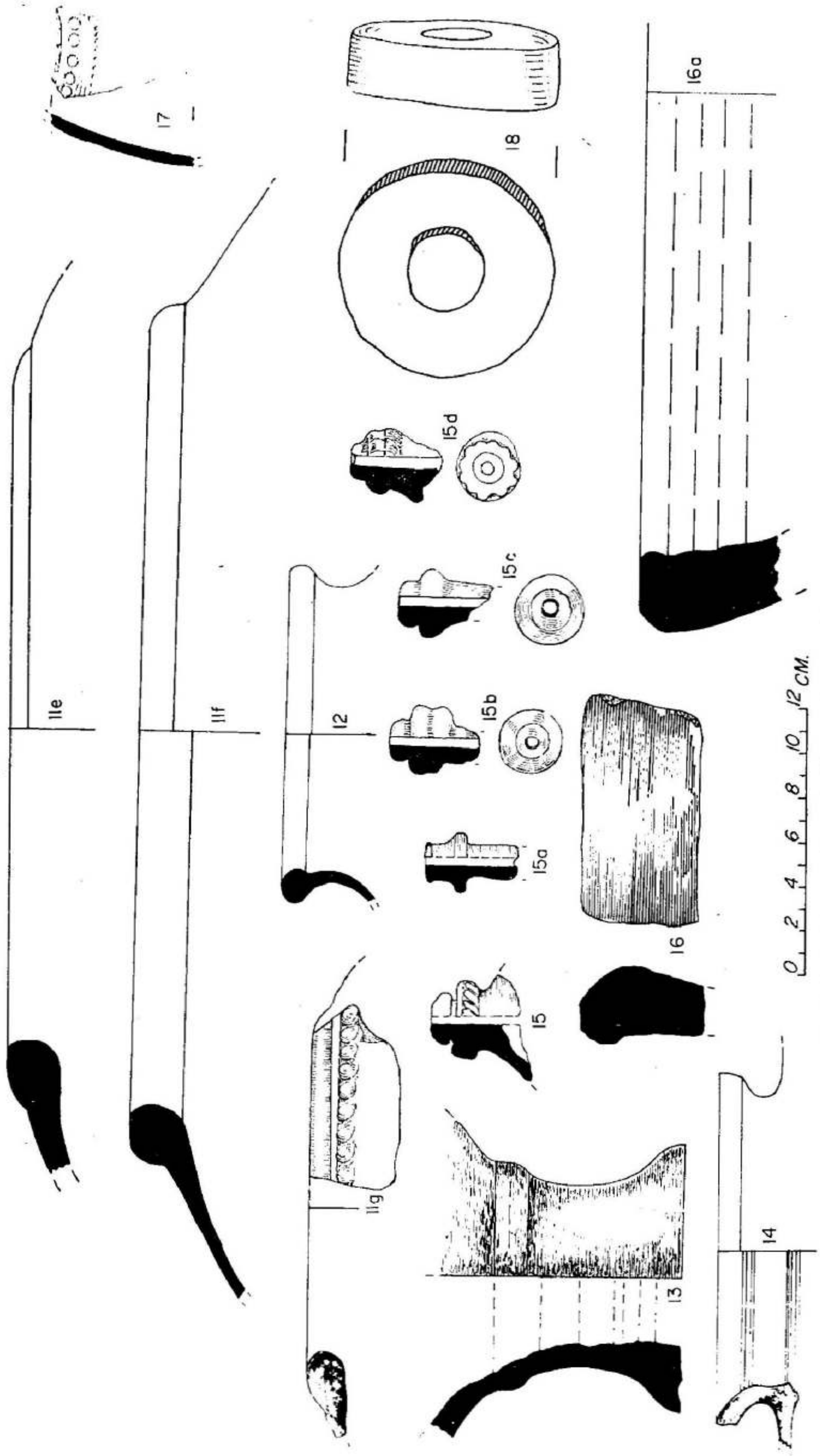


FIG. 26. *Red ware from Vellayan Iruppu II*

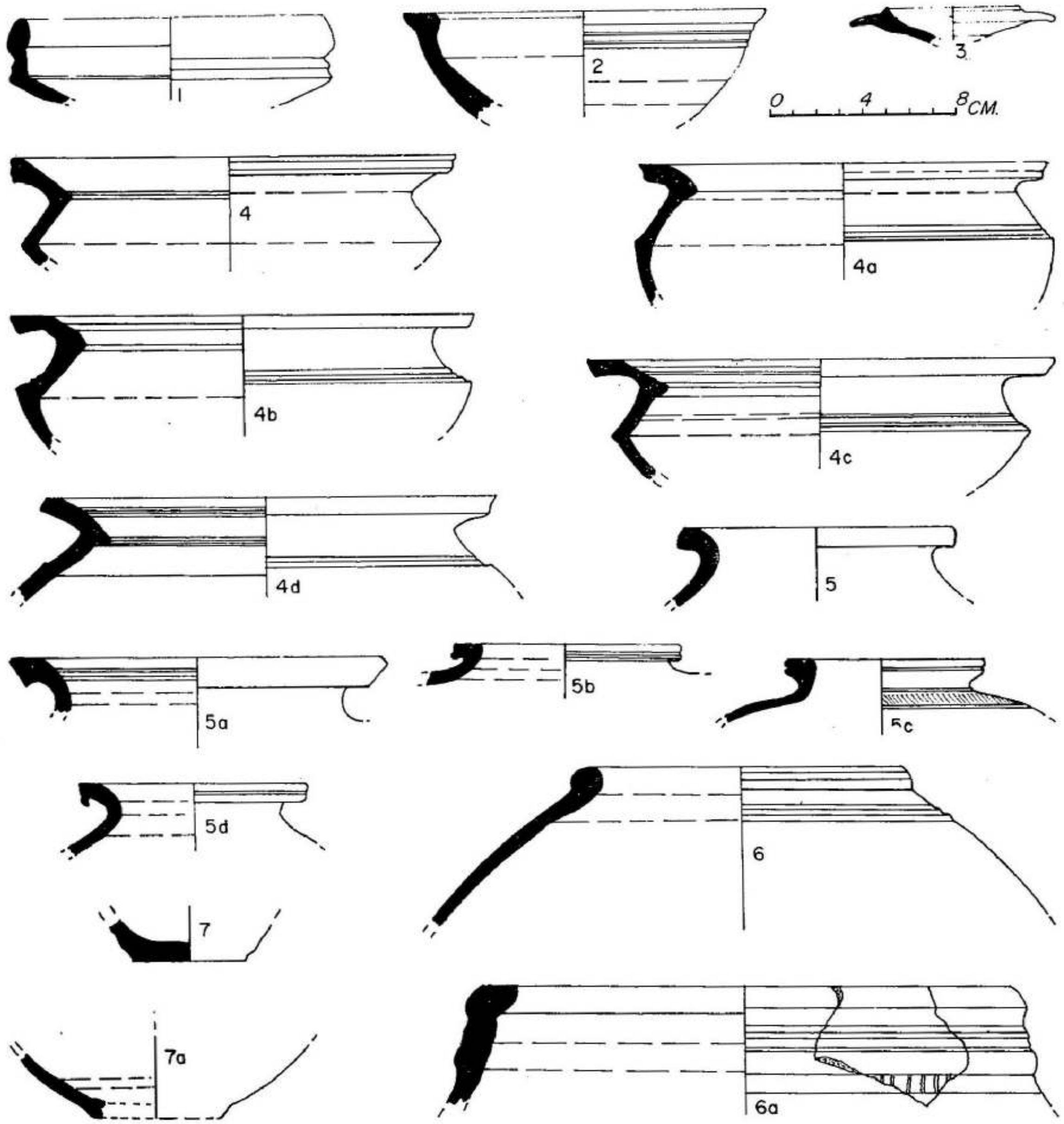


FIG. 27. *Red ware from Vellayan Iruppu II*

12. Narrow mouthed globular rim, concave neck and thin body. From layer 3.
13. Ringstand type into a hollow pedestal base, thickened at the bottom, internally carinated and externally prominently beaded waisted, low channel and flaring upper side (rim missing) From layer 3.
14. Flaring necked pot with externally vertically grooved collared rim. It has incised nail lifted curved designs on the collar. From layer 3.
15. A series of nozzle type of the chamfered rim with undercut and prominently beaded and pellet-applied design or prominently grooved (15b) beaded type or flanged type (15e) with straight channel. The archetype has a scalloped design (15d) around the beading (15e) and also a drooping flange (15f). From layer 3.
16. A set of hand made thick fabric storage jar of slightly thickened rim and straight sides or very heavy wall, incurved and internally pointed and corrugated body. From layer 3.
17. Is a decorated sherd with circlets with a series of grooves and short slashes. From layer 3.
18. A heavy ring of solid perimeter, probably hand made, for seating heavy water pots as is common even till today, but in other materials.

Layer 2 showed a series of carinated bowls with very characteristic out-turned, flaring and externally pulled only or leaf-shaped, or groove collared or drooping and undercut rim variously : or button based flat vessels, shallow body, lid-cum-dishes and closing rimmed storage jars. All these showed sophistication in their production, in a variety of rim forms, thinner section and, decorative features (fig. 27).

1. Medium to small shallow dish with internally thickened and externally blunt collared rim, straight inner side but widening out well with beading above the sharply carinated waist leading to a shallow base.
2. Hemispherical bowl with internally thickened nail-head rim and smoothly curving and tapering lower part. Grooved on the exterior below the rim.
3. Small lid-cum-dish with a very short blunt rim prominently projecting curved flange and very shallow saggar base. Interior has a smooth tapering profile.
4. A characteristic shouldered and carinated pot or bowl with a prominently flaring and externally chamfered rim and internally sharp ledged neck, expanding shoulder and sharp carinated ware and tapering base. The variants are representing (4 a) everted, flanged and externally grooved rim, blunt carinated and deep rim body; (4b) with a horizontally pulled out rim and grooved exterior waist, (4c) with a prominent inner ledge (4d) a flaring rim, internally thicker at the neck and sharpened or externally of a drooping featureless rim; (4e) of shortest flaring rim with externally chamfered rim and mildly ledged shoulder, and grooved interior. From layer 2.

5. Water vessel with flaring or out curved leaf-shaped pointed rim, variants are (5a) with very short externally pulled or clubbed and drooping rim hand neck; (5b) horizontally pulled out top grooves and externally collared and grooved rim and no neck and widening body; (5c) similar to the above but with a very everted rim squarely pulled out grooved and with a thin drooping flange and widening body; (5c) with an everted rim externally mildly curved and thickened; and finally (5e) an everted and sharp leaf - or arrow-head shaped rim. From layer 2.
6. Medium to large storage jar of closing rim type. Which has a beaded rim, grooved neck and bulging and widening profile while the variant (6a) and (6b) has an internally pulled out pointed rim, externally beaded and multi-ribbed on the neck boldly and with vertical incision also on the lower groove of the neck or nail-raised depression on the outer neck.
7. Is a button based flat bottomed vessel preserved only in the lower part and showing a tapering body and thick base. From layer 2. It has a variant which has a hollow pedestal base.

In layer 1 (figs. 28 - 29) there are quite a few dish, bowl, basin, large jar and carinated pot and lid varieties besides one slip-painted variety of sherd. There are some decorative sherds also. Thus the habitation continued without any let up till this layer.

1. Deep bowl with an incurved and internally pulled out like a clubbed rim and rounded, thicker below the rim and throughout in its steep profile. Layer 1.
2. Deep bowl with a prominently incurving interior towards the rim and a convex exterior with a top grooved and collared rim and steep profile. A larger variant has a three-pronged grooving on heavy rim and thins out in the body. Layer 1.
3. Deep bowl with flat topped and externally beaded rim with double grooves below it on the exterior and a straight plunging profile. Layer 1.
4. Shallow basin with a rimmed and externally vertically cut rim with two grooves on the interior and a flange lower down above the bottom. The variant with rim missing but with the tapering and rounded lower body showing the typical inner projecting flange similar to Type 5 of layer 3 which has had many variants, and the variant with blunt widening rim has the flange broken. Layer 1.
5. Shallow dish with broad flat upper and incurved rim with double grooves on the exterior and tapering low profile. Layer 1.
6. Almost similar to type 5 above but with externally projecting, flat topped rim, internally everted and with a beading on the exterior below rim followed by a button base. Layer 1.
7. Bowl with incurved and blunted rim, corrugated exterior and somewhat deep profile. Layer 1.
8. Bottom of a deep goblet-like vessel with a flat base, thickened on the interior in the middle. Layer 1.

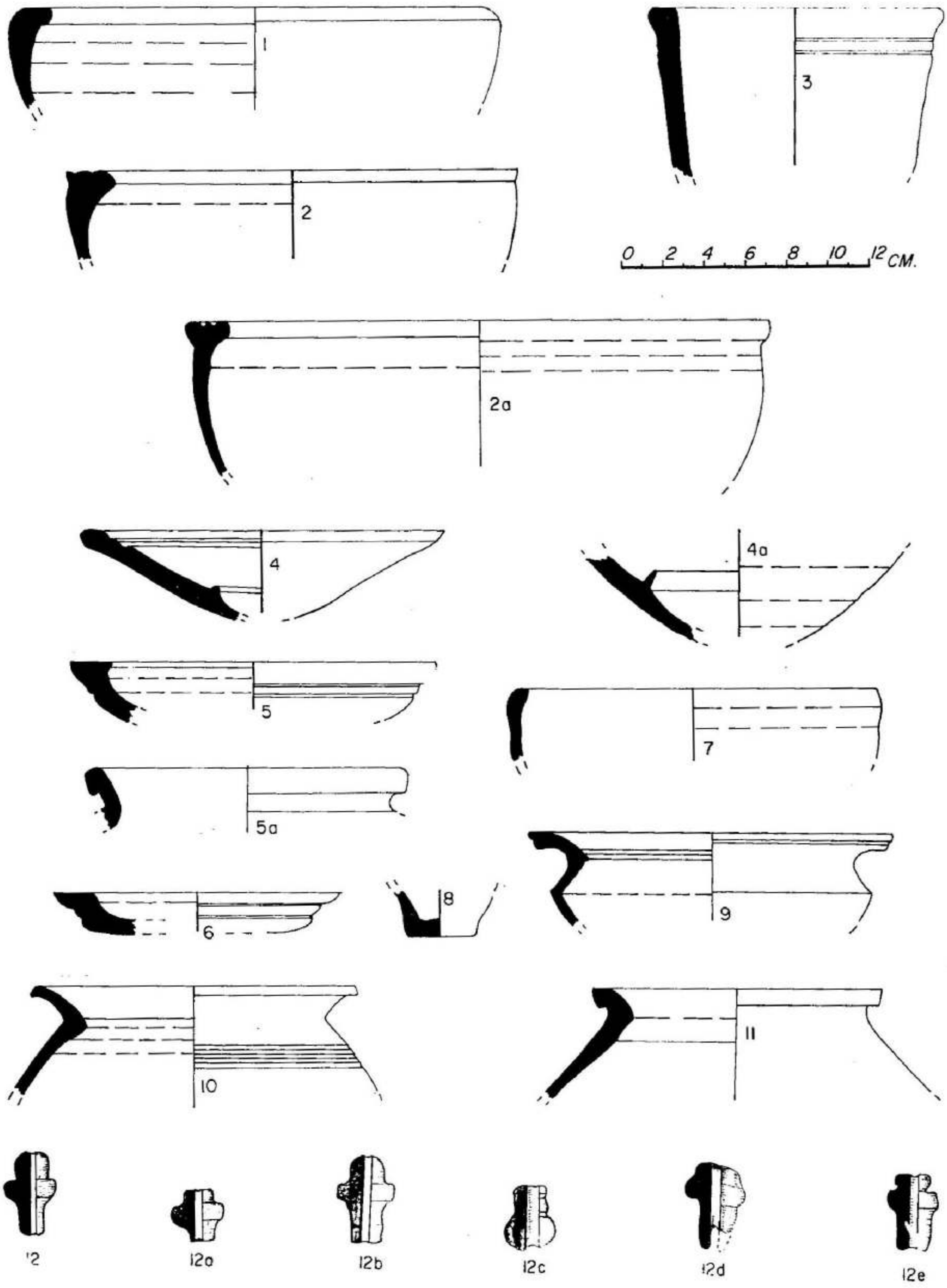


FIG. 28. *Red ware from Vellayan Iruppu II*

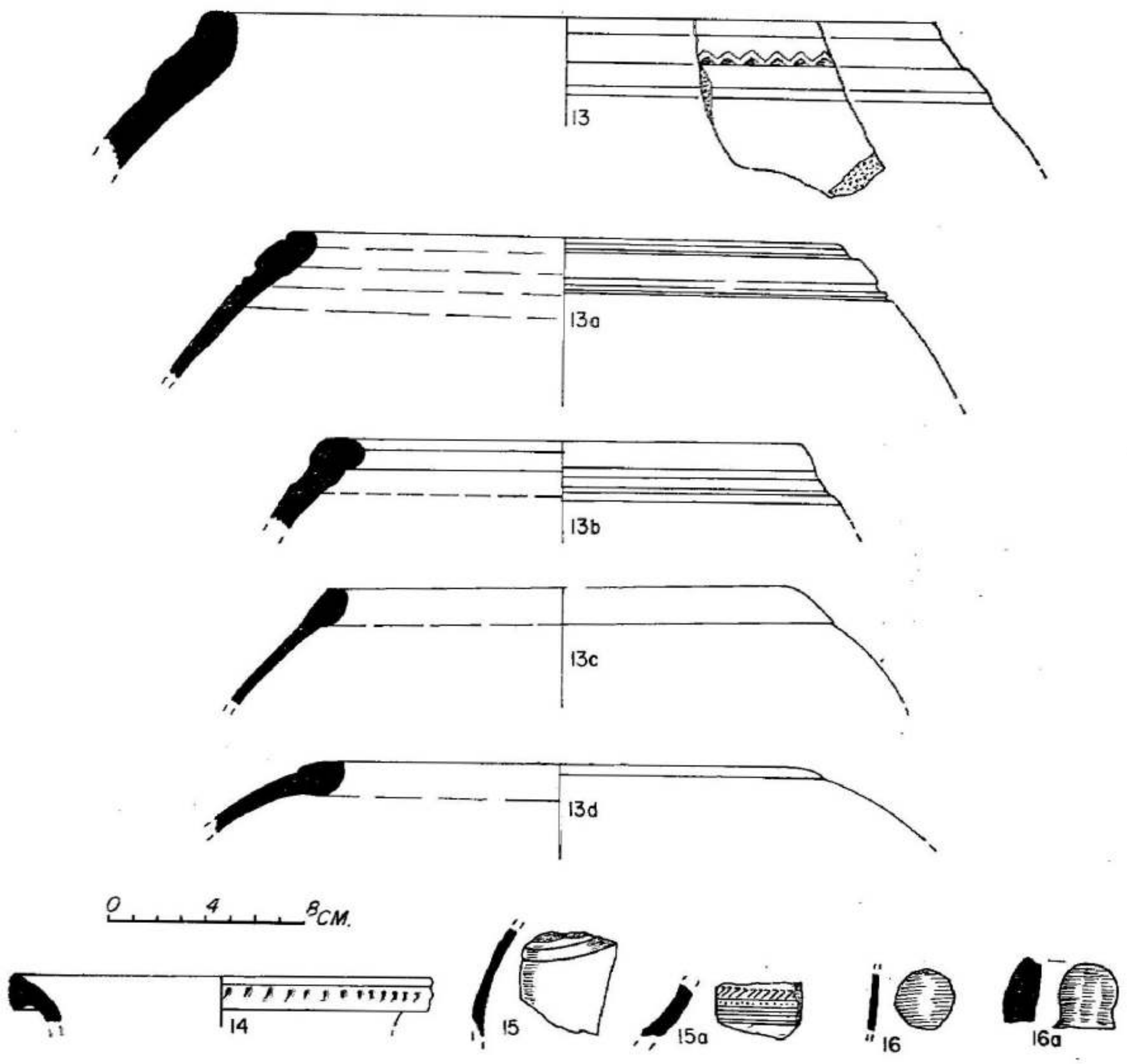


FIG. 29. *Red ware from Vellayan Iruppu II*

9. Carinated bowl with flaring pulled out and externally grooved, collared rim and unusually drooping ledges of a sharp carination leading to a shallow base. Layer 1.
10. Water vessel with flaring externally vertically cut rim and horizontal shoulder and corresponding drooping neck on the inside. Heavily grooved on the interior. Layer 1.
11. Water pot with everted, flat topped and obliquely cut and collared rim and widening profile.
12. A series of six nozzle types with straight channel and beaded and flanged exterior, the flanges being of the rounded or beaded or vertically cut or ledged types, and of short or elongated terminal part. Layer 1.
13. A series of five jars with closing rim and globular body with flattened rim, ledged and grooved exterior carrying zigzag ornamentation in the upper groove and widening body and of the largest size (13)—Variants are beaded and grooved exterior (13 a), ledged exterior and internally pulled and clubbed rim (13b), internally thickened and beaded rim (13c) and arrow tip rim (13d). Layer 1.
14. Part of the body of a vessel with red slip painting coating of thick outer border and a series of connecting bowls matching the span within the border. Layer 1.
15. Two decorated sherds, one with concentric lines, and the other with hooked slashes above the line of dots, over concentric lines. Layer 1.
16. Two fragmentary sherds one grooved into a disc perhaps for playing hopscotch and the other part of a round knob. Layer 1.

CHAPTER VI

ANTIQUITIES FROM THE SITES

As already explained, the antiquities from the sites at Kaveripattinam, apart from being rich in themselves in variety and frequency show also the steady pace of growth of the civic life style in this port-town, within which there are high points and spurts indicative of the landmark stages of the occupation cycle. While the articles range from beads on a variety of materials, terraçotta figurines and other cult objects, bangles of shell, glass, terracotta and paste, copper objects including vessels, rings, a rattle and statuette fragment, bangles and wires, stone objects like pestles, tablets and ritual figures and a *Buddha-pada,* iron objects including flat, cold-chisel fragment, knife and nails, dagger blade and jingle, coins variously punch-marked, Roman, Chola (early as well as Imperial medieval stages), Vijayanagar and Setupati coins, and miscellaneous objects like gamesmen, spools, discs, conch shell fragments, stucco fragments, moulds and moulded bricks, plaques etc., which reveal the industrial, aesthetic and entertainment index of the life, they also give us the chronological stages of the developing activities of the site which reinforce the general chronology, through datable media like pottery and structural forms.

The frequency of their occurrence, both layer-wise and locality-wise would seem to suggest that their intensity of provenance (of one type of antiquity or the other) is mostly in the early historic periods (second-third century A.D. as from Vanagiri, Kilayur, and Manigramam) peaking in the stage of Buddhist activity of Pallavanisvaram (Phase-I) around the fourth-fifth century A.D. and again rising to fresher climax in the central parts of the period from ninth to the eleventh century A.D. at Vellayan Iruppu-II, obviously due to the rise of the Imperial Cholas who wrested power, under Vijayalaya Chola, from the Muttarayars and began ruling from Thanjavur shifting the capital there from the erstwhile Uraiyur further upstream of the Kaveri near Tiruchirappalli. Beads, bangles and terracotta of registered their richest occurrence excepting that, at the habitation of Vellayan Iruppu-II, terracotta was in a relatively low frequency, more in the lower levels than in the upper. This was obviously because bronze-casting had replaced terracotta, for ritual images, in a manner that the art history of the Cholas had resplendently recorded. Bangles, copper objects, and coins, however, were seen commencing from the earliest pre-Christian levels of the port-town, as in the sites of Kilayur and Vanagiri, indicating that the stamina of the site, even in the pre-Christian centuries was robust. Beads of glass particularly deserve special mention in this context.[1] Taking note of the fact that the antiquity count had been confined to excavated specimens and did not include surface collections

[1]The earliest beads of glass had been seen elsewhere, at Rajghat etc., in eighth-seventh B.C. levels. Generally, the middle to late levels of NBP ware period in upper India (fourth-fifth century B.C.) produces glass beads. In South India, except in the Deccan, the availability of glass beads well into the B.C.'s, as at Kaveripattinam is significant and suggests good contacts.

(which were rich in themselves) and also the fact that only a limited trenching had been possible in each of the localities, excavated and reported in this volume, the urbanised life style at this port-town from the B.C.s. upwards to the time of the Imperial Cholas, had been consistently of a high order.

Selected examples of the various categories of antiquities have been described in the following pages, leaving out fragments and indeterminably damaged cases.

Despite the fact that a set-back for a short span of time, around the fifth to sixth century A.D. had taken place when the now legendary sea incursion was encroaching upon a good part of the coastal locations of the ancient port-town, the importance and the brisk use of the port, appears to have continued unabated.

The chart showing the layerwise distribution of the different classes of antiquities (selected examples of which have been illustrated), would clearly emphasise that, being a trade mart and port, which had enwrapped and involved a good part of the hinterland area (as Pallavanisvaram, Vellayan iruppu and Manigramam) within its layout and organisational fold, everyone of these localities had registered a steady and even increase of the frequency of antiquities from the lowest to the top stratum, although the middle layers show a bulk display of these, suggesting also a stage of great prosperity in each case.

Some of the antiquities like the *Buddha pada* and the small bronze image of the Buddha himself in the monastic site of Pallavanisvaram, have an importance and cultural value of their own in the study of the Buddhist art of the area, from Krishna valley to the southernmost part of the peninsula. Coins similarly include alone Roman copper coin, a few of punch-marked variety and profuse Chola issues, especially of the time of Raja Raja I. A less dominant but aesthetically more interesting, nevertheless, are the stucco figures often with patches of painted pigments on them. They reveal the natural media in this Kaveri delta zone where stone was unknown for quite sometime in its early history, but on the other hand, brick, terracotta and stucoo was the preferred and perfected media. They reveal the prosperity, interaction, create vigour and social demands of this urban cosmopolitan port-town.

(a) Beads (pls. XXIV B— XXVIII A)

More than three hundred and fifty beads of various materials such as glass, agate, carnelian, jasper, coral, terracotta, paste, stone, copper etc., were encountered in the excavations at different sites of Kaveripattinam (besides a huge bulk of surface collection).[1] A majority of the beads was of glass indicative of the brisk character of the industry in this material both for beads and bangles. The range of colour was from shades green, blue, red, black and to yellow.

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[1]No typical etched beads of various shapes associated with 'Megalithic' burials were seen from actual excavations. On surface, from Kilayur, however, one was picked up (c.f. see item no. 3 (136).

Antiquity range from various localities of Kaveripattinam:

		Terra cotta	*Beads*	*Bangles*	*Copper*	*Iron*	*Coin*
12th century A.D.	①	1	57	37	7	15	5
Vellayan	②	4	25	23	-	7	9
Iruppu-II	③	3	50	34	14	10	4
(Melayur)	④	2	16	7	1	3	1
	⑤	6	3	6	-	-	-
9th century A.D.							
	①	-	19	4	6		
	②	14	48	25	12		
Pallavanesvaram	③	4	32	3	3		
	④	8	22	3	-		
(Melayur)	⑤	-	-	-	-		
4th century A.D.							
	①	3	35	38	8	1	
Manigramam	②	-	12	7	-	-	
	①	-	49	2	-	-	9
Vanagiri	②	-	-	-	-	-	-
	③		3	-	-	-	-
1st century A.D.							
	①		3	2		2	3
Kilayur	②		2	4		4	-
	③	-	-	-	-	-	1
3rd century B.C.							

The period of distribution of beads can be stated as in the following tables.

Site	*Period*	*Total*	*Date*
Kilayur	I	1+2	Third century B.C. - first century A.D.
Vanagiri	II (a)	Nil	First century A.D. - third century A.D.
Pallavanesvaram	II (b)	102 + 19	Fourth - seventh century A.D.
Manigramam	I & II (a)	12 + 35	Second - first century B.C.- third century A.D.
Vellayan Iruppu-II	III & IV	151	Ninth twelfth century A.D.

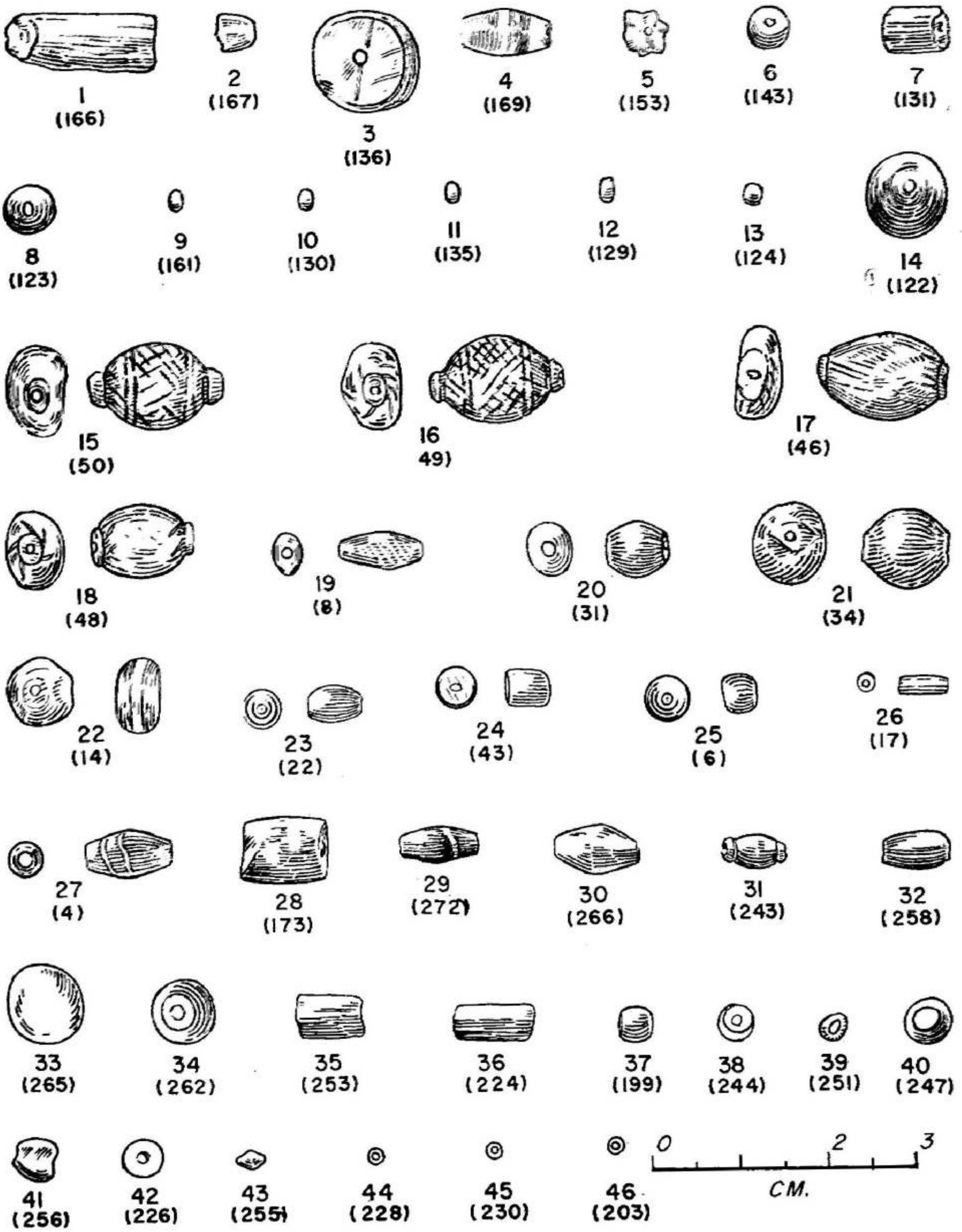
Table showing layerwise distribution of beads in excavation.

Name of site	*Layer 1*	*Layer 2*	*Layer 3*	*Layer 4*	*Layer 5*
Kilayur	49	2	1	-	-
Vanagiri	43	-	-	-	-
Pallavanesvaram	14	56	15	15	3
Manigramam	35	12	-	-	-
Vellayan Iruppu-II	57	25	50	16	3

A list of selected glass beads are as under :

(i) Kilayur (fig. 30, 1-14)

(166)	1	Glass	Long cylindrical circular	layer 2
(167)	2	Garnet	Globular	layer 2
(136)	3	Jasper	Etched standard circular	surface



1 (166)
2 (167)
3 (136)
4 (169)
5 (153)
6 (143)
7 (131)
8 (123)
9 (161)
10 (130)
11 (135)
12 (129)
13 (124)
14 (122)
15 (50)
16 49)
17 (46)
18 (48)
19 (8)
20 (31)
21 (34)
22 (14)
23 (22)
24 (43)
25 (6)
26 (17)
27 (4)
28 (173)
29 (272)
30 (266)
31 (243)
32 (258)
33 (265)
34 (262)
35 (253)
36 (224)
37 (199)
38 (244)
39 (251)
40 (247)
41 (256)
42 (226)
43 (255)
44 (228)
45 (230)
46 (203)
0 2 3
CM.

FIG. 30. *Beads*

(169)	4	Agate	Barrel circular	layer 2
(153)	5	Green glass	Barrel gadrooned	layer 1
(143)	6	Glass	Barrel circular	layer 1
(131)	7	Coral	Long cylindrical circular	surface
(123)	8	Transparent Green glass	Spheroid	layer 1
(161)	9	Green glass	Micro-short oblate circular	layer 1
(130)	10	Green glass	Micro-short oblate circular	layer 1
(135)	11	Black glass	Micro-short oblate circular	surface
(129)	12	Coral	Micro-short oblate circular	layer 1
(124)	13	Green glass	Micro-short oblate circular	layer 1
(122)	14	Green glass	Spheroid	layer 1

(ii) Vanagiri (fig. 30, 15-27)

(50)	15	Jasper	Barrel, rough elliptical groove-collared	layer 3
(49)	16	Jasper	-do-	layer 3
(46)	17	Jasper	Groove-collared elliptical	layer 1
(48)	18	Jasper	-do-	layer 3
(8)	19	Jasper	Spheroid	layer 1
(31)	20	Chalcedony	Spheroid	layer 1
(34)	21	Transparent green glass	Bicone hexagonal	layer 1
(14)	22	Green glass	Long barrel oval	layer 1
(22)	23	Stone	Barrel triangular	layer 1
(43)	24	Black glass	Circular button shape	layer 1
(6)	25	Black glass	Cylindrical circular	layer 1
(17)	26	Coral	Cylindrical circular	layer 1
(4)	27	Banded agate	Barrel circular	layer 1

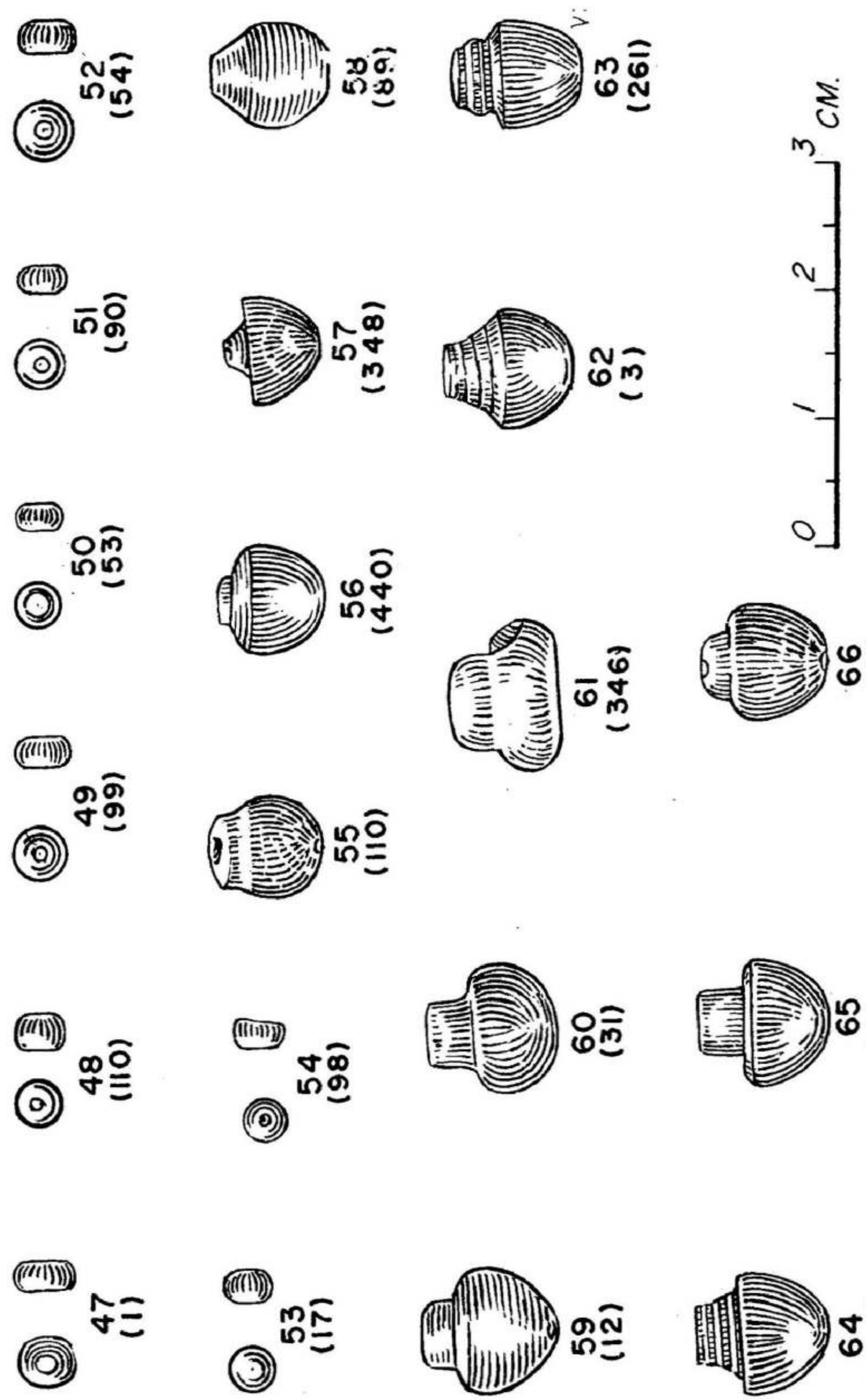

47 (1)
48 (110)
49 (99)
50 (53)
51 (90)
52 (54)
53 (17)
54 (98)
55 (110)
56 (440)
57 (348)
58 (89)
59 (12)
60 (31)
61 (346)
62 (3)
63 (261)
64 (245)
65 (1)
66 (5)
0
1
2
3
CM.

FIG. 31. *Beads*

(iii) Pallavanesvaram (fig. 30, 28-46)

(173)	28	Soapstone	Tubular rectangular	surface
(272)	29	Carnelian	Barrel faceted	layer 5
(266)	30	Agate	Long barrel elliptical	layer 3
(243)	31	Blue glass	Barrel circular-groove collared	layer 4
(258)	32	Agate	Spheroid	layer 2
(265)	33	Crystal	Hexagonal	layer 3
(262)	34	Jasper	Flat oval	layer 2
(253)	35	Blue glass	Tubular square	layer 2
(224)	36	Blue glass	Tubular square	layer 3
(199)	37	Jasper	Barrel triangular - lug collared	layer 2
(244)	38	Coral	Short oblate oval	layer 1
(251)	39	Glass	Barrel circular	layer 2
(247)	40	Glass	Barrel circular	layer 2
(256)	41	Copper	Short oblate circular	layer 2
(226)	42	Carnelian	Spheroid	layer 3
(255)	43	Green glass	Micro barrel circular	layer 2
(228)	44	Coral	Micro spheroid	layer 4
(230)	45	Green glass	Micro spheroid	layer 3
(203)	46	Green glass	Micro short oblate circular	layer 2

(iv) Vellayan Iruppu II (fig. 31, 47-54)

(1)	47	Green glass	Micro short oblate circular	layer 1
(110)	48	Green glass	Micro spheroid	layer 4
(99)	49	Green glass	Micro spheroid	layer 3
(53)	50	Green glass	Micro spheroid	layer 2
(90)	51	Coral	Micro spheroid	layer 3
(54)	52	Green glass	Micro spheroid	layer 2
(17)	53	Green glass	Micro short oblate circular	layer 1
(98)	54	Green glass	Micro spheroid	layer 3

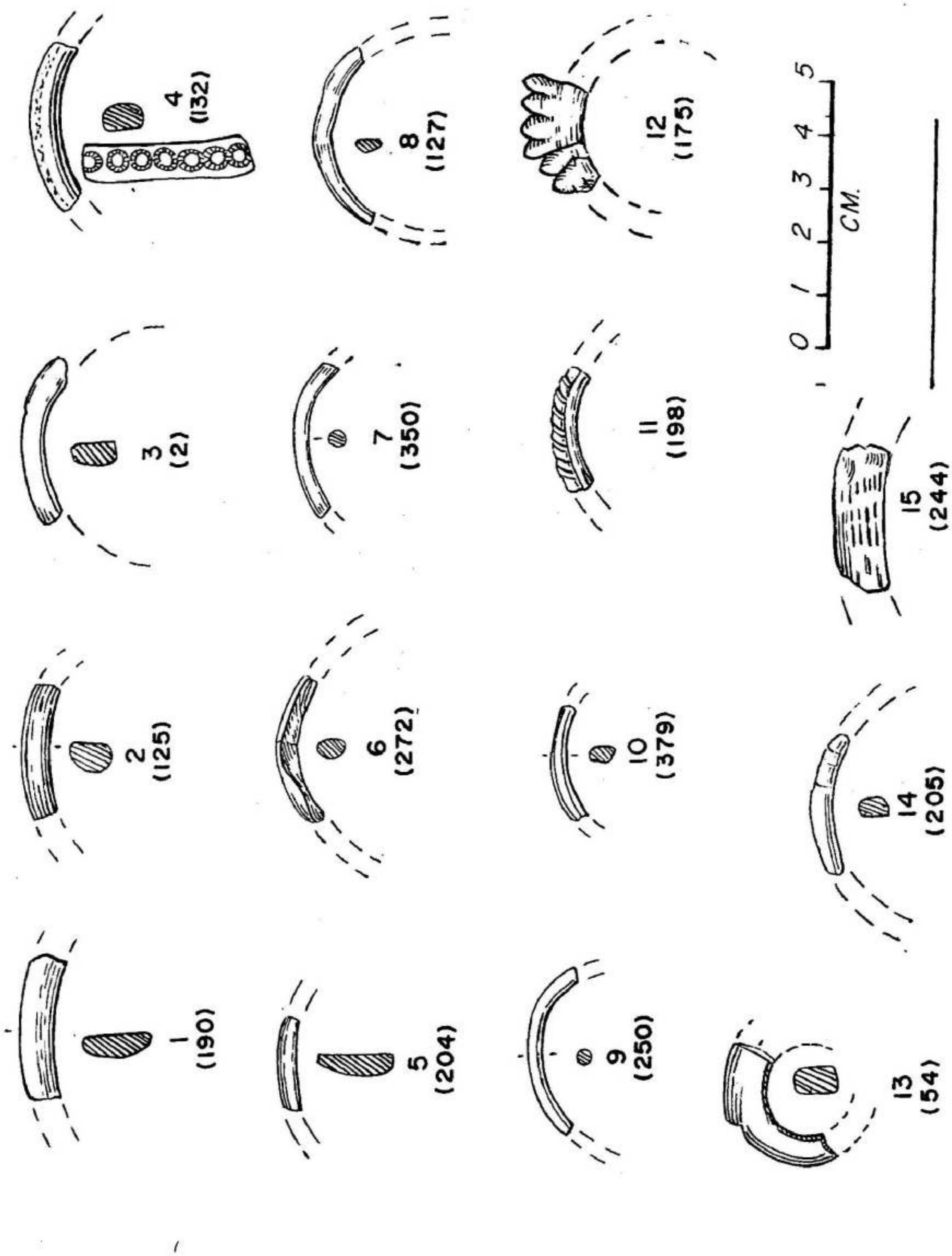


FIG. 32: *Bangles*

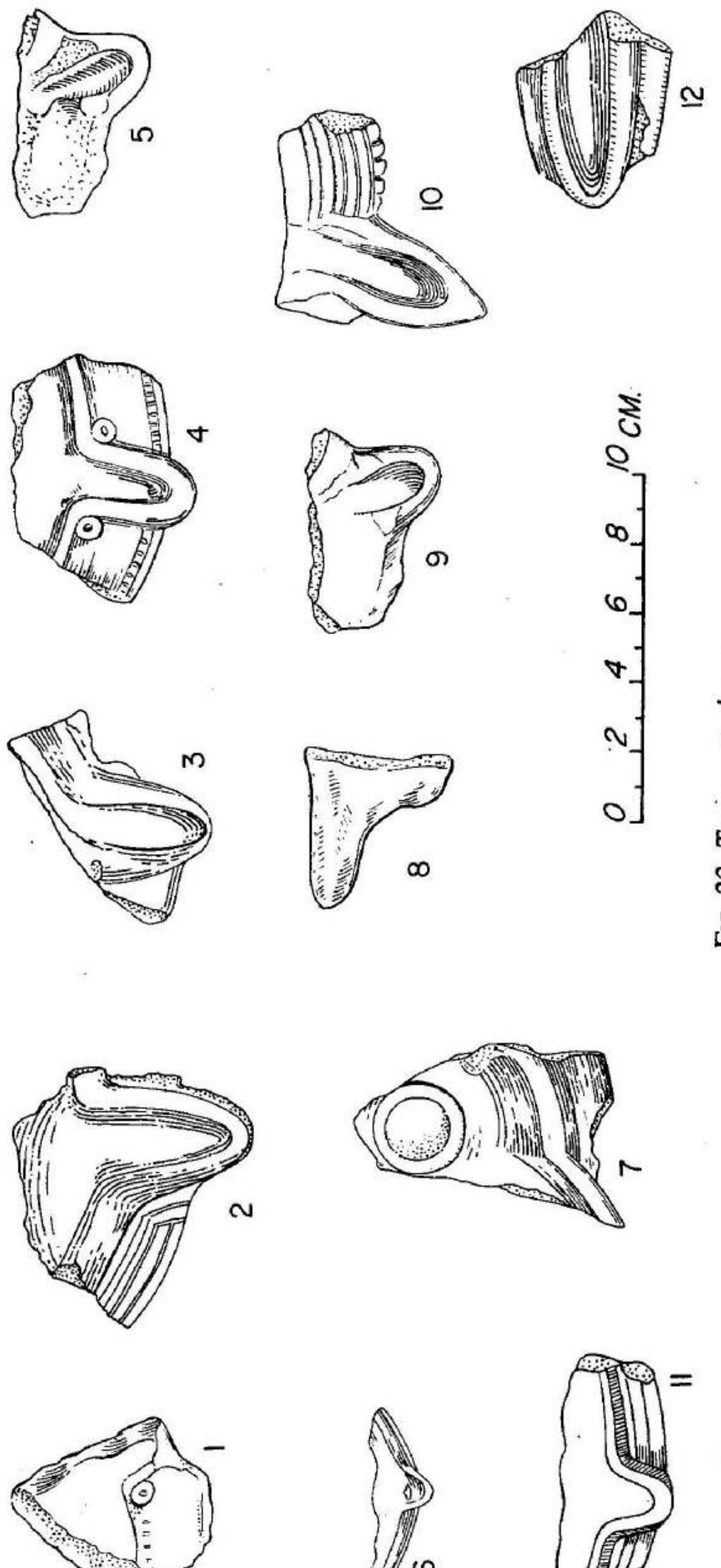


FIG. 33. *Terracotta lamps*

(The comparative decrease in this pre-mediaeval and mediaeval location is due to the rise of gold, silver, pearl, copper and other such material for beads, in these periods). The universal popularity of glass is also attested.

(b) Bangles (pl. XXVIII B; fig. 32)

The bangle types recovered from the various sites of Kaveripattinam are mostly made of shell, glass, terracotta and paste.

A majority of the bangles were of glass and had a wide range of colours including yellow, green black, red, white, blue, pink, polychrome etc. Some of them are highly decorated around the periphery. Selected bangles are described below. A brisk local industry in bangles is well attested by these occurrences. The bangles were seen in bulk in the penultimate lower layers at Pallavanesvaram,[1] upper layer of Manigramam and meagrely in I A and B layers of Kilayur and Vanagiri and most profusely in the three upper most layers of Vellayan Iruppu.

A selected few of the bangle types are described and illustrated.

1. Fragment of a terracotta bangle with fine ornamentation on the periphery. Layer 1.
2. Fragment of a thin yellow glass bangle, oblong in section. Layer 5.
3. Fragment of a black glass bangle with thick plano-convex section, with grooves on the circumference. Layer 3.
4. Fragment of a white glass bangle with thin circular section. Layer 3.
5. Fragment of a light blue glass with medium plano-convex section, with grooves. Layer 4.
6. Fragment of a black bangle piece with medium section with grooves. Layer 3.
7. Fragment of yellow glass bangle with thin circular section. Layer 1.
8. Fragment of a dark blue glass bangle with broad plano-convex section. Layer 2.
9. Fragment of a blue glass bangle with a prominent ridge at the centre, medium section. Layer 2.
10. Fragment of a black glass bangle with broad plano-convex section. Layer 2.
11. Fragment of a shell bangle, irregular circular with rectangular section. Layer 2.
12. Fragment of a shell bangle with circular to rectangular section. Layer 2.
13. Fragment of a thick polychrome glass bangle with a series of bands on exterior surface, broad section. Layer 2.

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[1] This can be compared for its period third-fourth century A.D. with the profuse occurrence of bangles in the Hariti temple site of Nagarjunakonda (third century A.D.) as a mark of the ritual offering.

FIG. 34 *a* : *Terracotta objects*

14. Fragment of a black glass bangle of medium thickness with a groove on the exterior surface. Layer 2.
15. Fragment of a black glass bangle, of medium thickness, oblong section. Layer 3.
16. Fragment of a black glass bangle of medium thickness, rectangular section, with a groove on one side of the exterior border. Layer 2.
17. Fragment of a terracotta painted bangle, of medium thickness, circular, with a ribbed ornamentation on the exterior. Layer 2.

(c) Terracotta Objects

The terracotta specimens from Pallavanesvaram and Vellayan Iruppu-II sites are described hereunder since Kilayur and Vanagiri did not yield any and a few from Manigramam are from the topmost layer. Terracotta lamps described under pottery earlier, are also included for illustration here (fig. 33).

PALLAVANESVARAM (pls. XXIX, XXXA, XXXII B and XXXIII; fig. 34)

The terracotta finds are dealt with hereunder from the earliest to the latest layer in both the sites as it would have the advantage of not only mooring the leanings of the terracotta production and its theme or content and then watch its development as a category in the subsequent levels or phases of the period to which the site belonged. It is interesting to note here that the advent of Buddhism into Kaveripattinam in the early historic period seemingly acted as a catalyst for the flowering of the extant terracotta tradition from its formative stages and thus broadly summarises the status of terracotta production at Kaveripattinam from the early historic stage (fig. 34, nos. 1, 2, 6, 8, 23, 24 & 36), the latter part of which is represented by Pallavanesvaram site, and further into the pre-mediaeval and early mediaeval stage which Vellayan Iruppu-II site represents. Between the two, thus, the vicissitudes of the terracotta tradition are documented with appropriate analysis of the contents.

There are two terracottas (fig. 34a, 1-2) from layer 4 which significantly reflect the contemporary style as prevalent in the other artistically high calibre site of Nagarjunakonda in the Krishna Valley. These show a male and a female figure, the former (no. 1) having a high turban with a bow-like cross-wise crest and with lowest fold of the turban revealing ornamental jewellery embellishment of the figure on the forehead along the hair line.

The forehead itself is a smooth curve with the eye brows shown in slightly converging pattern and with eyes large and elongate. The turban is indicated by oblique incised slashes of the textile fold. This follows as much the Ikshvaku as the early Gupta tradition.

The other female figure (no. 2) is provided with a combination of curled hair style around its ear-ornament on either side of the face and is ornamented with a necklet or *kanthi* reasonably close to the neck and a *sthana-sutra* (necklace rising over or between the breasts) which has, however,

been shown by almost a straight converging line from the neck with the pendant resting between the breasts. The bosom itself is of subdued contours consistent with the style prevalent in the Sunga-Kushana stages of art. Both these terracottas are important indices which support a date for them in layer 4 at Pallavanesvaram around the early fourth century A.D., if not slightly earlier.

Layer 4 also showed some examples (fig. 34a, nos. 4, 5, 9, 19, 20 & 22) of a leg fragment which are almost similar to the heavy and short legs found in Nagarjunakonda, as given to the *yaksha* figurines of terracotta, generally shown with arms akimbo or thrown out at the sides. Another female figure (no. 3) of the same layer at Pallavanesvaram shows the lower torso, from the belly downwards whose modelling and moulding, despite its casual lines of drapery has a becoming contour below the belly where a belt clasp is keeping the lower garment in position. This lower drapery itself is hanging in a central folded hem and oblique layers on the thighs showing a diaphanous covering. While not belonging to the Sunga tradition as such, the whole inflexion of the contours of this fragmentary torso reveals a Kushana to Gupta transitional tradition of the main stream sculptural art and could fit into its age here at Pallavanesvaram. It will clearly underscore that close contacts that this port-town on the one hand and the Buddhist monastic establishment on the other had existed with Deccani and upper Indian cultural movements and locations.

That the figure created here has the flair of a current tradition is further revealed by another very significant example where a torso which is unfortunately extant only upto the thighs, shows what is seemingly a figure of a warrior on whose back (fig. 34a, no.6) across his left shoulder is strung a quiver with an arrow shown within it, and the body is draped as seen around the hips with a kind of *channavira* cross-belt going across the chest and around the hip, at the back. The multiple neck ornaments of the figure have in the lowest of them, a pendant which is swung to one side in the gesture of movement that seems to be indicated by the left hand which unfortunately is missing from the shoulder joint onwards. This moulded terracotta is again in the classical tradition, despite its being on a comparatively inferior fabric.

This stylistic tradition has been maintained even upto layer 2 of this site in certain of the terracottas, coeval with others in a poorer tradition. This is shown by a beautiful head from layer 2 which displays a kind of *dhammilla* top knot unfortunately broken, fastened by a strap-like device, below which the edges of the hair over the forehead are decorated with jewelled band represented by pierced dot incisions. This figurine also carries a face of great charm with the well curved forehead and converging eyebrows and well formed lips and chin definitely linking it with the tradition of the late Gupta period (fig. 34a, no. 23).

Another terracotta also from layer 2 (fig. 34 a, no. 11) is interesting in the treatment of its face. It shows a high cross-bow-like top knot fastened by a band at the base below which curly strands (*chikura*) beautify the edge of the forehead. The fact itself is rendered more bovine than human and from out of the proper right corner of the mouth is held what appears to be a fish. The body of the figure does not show, however, the elements of a female anatomy. Generally, the figure of Varahi (among the Sapta-matrakas) is variantly in the northern India shown as holding a fish in the mouth.

It is not clear, however, if this could be a female figure. If so, it would be the earliest representation of Varahi in Tamilnadu. There is no doubt that it is a cult figure.

Another female figure, also from layer 2 (fig. 34a, no. 24) is of a class described earlier, but of poorer modelling with rich jewellery and decoration and shoulder clasp and necklets which seem to carry pendants of miniature auspicious symbols like *swastika* etc. Its arms are also plump and smoothly curved at the shoulder and bent at the elbow, as if holding something in the fore arm. This female figure is also portrayed in the terminal part of the traditions seen at Nagarjunakonda. It may be recalled that one of the Pitalkhora *yakshas* (with an inscription of one Kanhadesa, a goldsmith as having got it done) and belonging to the Satavahana tradition of western Deccan, shows such pendants of talismanic kind hanging from his necklace.

A fragmentary figure seemingly of hollow mould from layer 3, depicts the forehead and upper parts of the snout of an elephant with deep-set sensitive eyes provided by a pellet, with the *mastaka* (forehead) and trunk engraved in outline (fig. 34a-13). Considering the size of the fragment, the total figure would have been of more than medium sized terracotta animal figure.

From layer 2 are found three examples of a slightly larger sized terracotta, one (fig. 34a, no. 33) of the possibly right foot, with the provisions for the anklet decorated with five jingles (*kinkini*) on its front part resting on the upper part of the foot. The height of the terracotta if complete would have been not less than 20 cm, if not more. Here again is an indication of the development of medium to large sized cult figures in terracotta in the terminal part of the monastic phase or the beginning of the Buddhist temple phase, in the late Mahayana times when several divinities had been created under Buddhism.

The other two examples reflect two divergent milieu, one of the folk kind wherein the left arm chubby and short is held up vertically from the front elbow, with fingers folded—a type which is seen in smaller sizes and better perfection in the Krishna valley in the late Nagarjunakonda phase (no. 24). The third specimen (no. 35), on the other hand, is a perfect hieratic presentation of a hand in *kataka mukha* or *mudra*, with very sensitive finger modelling in the two middle fingers bent and touching the palm while the index finger and the short finger are bent at a level higher than the middle two, and the thumb is just touching the index finger at the nail level. There is no doubt about the highly realistic rendering of this fragment which should have been part of a fairly good sized terracotta figure. If one can make a guess, it may be of a Buddha figure in *vitarka mudra,* in consonance with the other hand which is missing, or that of an Avalokitesvara or Bodhisattva Padmapani holding the lotus stalk in his hand. Either way, it is truly an index of the stage of the monastic site and should be comparable with the bronze fragment of the hand also from this layer in this site. In this latter, however, it is in the correct *mudra* of *dharmachakrapravartana,* and should belong to Buddha himself with the palm decorated by auspicious marks. It is to be seen here that both the terracotta and the bronze show remarkably sensitive rendering of the fingers, although the bronze hand is even superior by its supple contouring of the palm and the figures that it portrays.

One more example of a medium-sized terracotta is also from this level and of the somewhat folk character and shows a fragmentary fore part of the foot. Here the right foot supported by a pedestal. like arrangement which has a hollow body, the feet together within the body of the figurine would have risen above the pedestal while there is no basis for guessing as to the nature of this figure, one may still consider that it was fit enough to be placed on a pedestal and could be either the Buddha or the Bodhisattva (fig. 34a, no. 39).

VELLAYAN IRUPPU (pls. XXX B, XXXI and XXXII A; fig. 34b)

Compared to the terracottas of the earlier sites, as at Pallavanesvaram Buddhist complex, the set of terracottas found from the excavated trench, Layer 5 at Vellayan Iruppu-II (1973) reveals both by their class and stylistic character the early mediaeval milieu, pertaining mainly to brahmanical or Hindu divinities etc. Of these, mention should be made first of a fragmentary head (no. 10) of a type which shows the rear side forming a vertical flat surface—an imitation of the usage current for the stone relief figures of divinities placed in niches where they have no rear side carving in the round but only a frontal relief. This figure with its conformity to the traditions continuing from the earlier centuries at Kaveripattinam has highly converging eye-brows, large eyes, pouting full lips. In the ear, it supports an ornament which is thicker on the left side and unidentifiably worn out on the right but perhaps similar. The forehead shows some treatment of jewellery over the back-swept hair.

Of the same layer is a knob decoration of a cult object perhaps, which shows the figure of a bird (no. 37), probably a parrot. The importance of this can be understood by the occurrence from the next layer (both 4 and 3) of a number of objects which represent animal and bird figurines of seemingly religious kind. Of them, there are four examples (nos. 14, 15, 21 & 38) of an almost identical type, all the four reflecting what appears to be the figure of a ram (fig. 34a no. 42) and could thus be related to Karttikeya or Subrahmanya, and might be votive objects which were offered to certain shrines. In the same group but from layer 3, there is another figure (no. 12) of Garuda with a characteristic crown, ear ornaments and a prominent beaked nose, with the face flattened out. It is seen that the period of the later levels of Kaveripattinam had shown the rise of the worship of gods of Saivism and Vaishnavism, as narrated in *Silappadikaram*

This is reinforced also by the fact that layer 4 of Vellayan Iruppu II is in link with the earlier traditions rather than those of the succeeding layers which seem to be introducing some changes. In the same layer 5 were found two more objects, one of a red-slipped terracotta figurines whose lower belt-shaped base, hollow inside, which depicts a treatment of the prominent ears as that of an elephant and a forehead and trunk and oblique-set eyes, also support this view. The trunk is seemingly kept rolled in. If it is not an elephant but a ram, the 'trunk' may be the horns shown sideward as a curve. It is indeed interesting that a similar terracotta was found in the next layer of this site also.

Similarly, in the same layer, and of hollow mould were two examples of a fragment appearing

to be Ganesa or the elephant god of Saivism, whose trunk was particularly shown in one of the fragments clearly. The other is an interesting example of hooded cobra with its two hoods available, with the mouth of the cobra shown with its typical bulbous eyes. It is seen that one of the pottery types from Vanagiri (layer 1) showed the applique form of a hooded cobra. The Naga cult appears to have been important thus in the later stages of the early historic and subsequent pre-mediaeval times.

Another example from this layer of a red slipped terracotta showed a *gana* with typical head

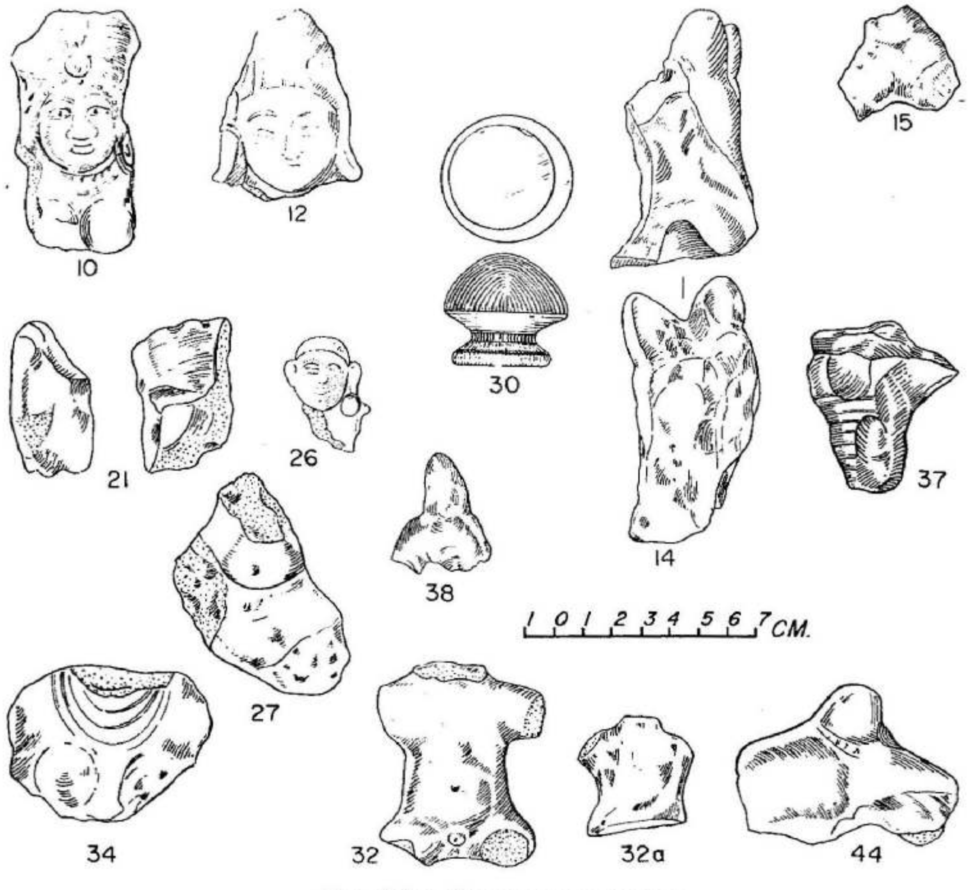

FIG. 34 b. *Terracotta objects*

gear.

Pertaining to layer 3, as already mentioned were respectively the Garuda figure and that of a gana with his right side fragment alone being available. One more interesting animal fragment was that of a fairly large-sized head and neck, unfortunately damaged, with the neck and pricked up ears alone being available. It is likely however, that this might be the figure of a tiger which is symbolically associated with the Cholas. Mention may be made of an animal head (no. 44) perhaps a tiger from layer 1. A further two, which were also fragmentary, were the decorative parts of a pillar on architrave above which was seen also in the moulded terracottas from Pallavanisvaram. Another was a gamesman (no. 30).

In the next layer 2, there were seven examples of which five were cult figurines, while the remaining two were respectively the feet of a folk figure and a gamesman. Of the cult figurines reference should be made undoubtedly to the most outstanding example of artistry in a fragmentary head which peculiarly enough seems to show the distended ears and a top knot and well smoothened hair-do over the forehead. Its face has been carefully modelled with a style which recalls strongly the early Chola tenth century stone sculptural style. Its slightly elongated face and subdued forehead were the hall-marks of fine modulation. This, however, could not be of the Buddhist class as well as in the Bodhisattva. The rear side head is also flattened out.

Another figure of importance in this group was again a cult figure of a seated divinity with a rather bulging belly bound by a belt and with circlets shown for the nipples of the bosom, and with the available left arm flexed and taken towards the waist. We may hazard a guess that this probably was the figure of Jyestha or Hariti, the delineation of both of which was much alike.

Next in importance would be the figure of a monk (no. 26) or a saint with a round head showing strands of hair swept backwards, with prominent forehead bands and ear-rings. The style of this example was in keeping with the general folk style of this period where the nose is usually punched, the lips incised, and the eyes shown popping out from under the eye-brows and shown by incisions. It is this style that was seen also in the other cult terracotta described earlier. Of the same category was one more from this level which showed the features of a ram figure with oblique eyes and curled horns on the sites and a projecting conical snout. This cult terracotta had elaborate head gear resting over two folds in a high crest with horizontal grooved lines suggesting perhaps that it might have depicted a hooded cobra. The forehead was decorated by a central pendant-like object. It is tempting to suggest that this goat or ram-faced figure might be Daksha, though not conclusively.

Of the definitive terracotta cult figurines of layer 2, two had been described already above. Three more represented variously, the figure of a seated God or Goddess with a prominent belly and heavy short thighs and legs hanging down. These were of Yakshas or such figures known from the earlier periods onwards at this site (and frequently referred to in literature also). The second one was a torso showing considerable controlled modulation (no. 32) with two arms moving out of the shoulder but broken at that point and two legs shown in perhaps seated position with the legs folded across. The back of the body was also rendered with restraint and plainness. What was outstanding however was the presentation of the *membrum virile*, though somewhat damaged. Perhaps this figure was representing the Yogi divinity like Lakulisa of the Pasupata-Kalamukha sect.

Another torso has lost both its head and arms (32a) and is a male figure.

The last one was a female figurine whose bosom part above had survived, with the usual flattened rear side and multiple concentric necklaces adorning the chest, of which the lowest was resting between the breasts. The subdued modelling of the piece was in the best tradition of the contemporary stone sculptures of the eleventh-twelfth century A.D. (no. 34).

The animal figure of a tiger (no. 44) from layer 1 has already been mentioned in relation to nos. 14, 15 and 38.

All these terracotta figurines from Vellayan Iruppu-II clearly show a break from the traditions of the earlier period. The rise of this tradition and simultaneously of multiple folk cults affiliated to the now dominant brahmanical religion, though with a sprinkling of the Buddhist cult position also, though these are inferior, in fabric and rendering, to the earlier ones, fully reflect the period from the ninth century to the twelfth century A.D.

From Layer 1 (no. 39) of this site was recovered a perfect example of a cult statuette with the pedestal showing four mouldings rendered in free style on the top of which was a figure of a pair of feet damaged but suggesting that it was a standing figure. It was seemingly part of the red-slipped cult figurines, of this period, as noted elsewhere in this site, above also.

A tentative possibility and surmise is thus irrestible that this crucial period (ninth-twelfth A.D. in the main) was the reflection of much of the cultural and cult environment recorded in the twin epics of *Silappadikaram* and its close sequel, *Manimekhalai*, and would thus open a window into the period which would have seen the creation of these works, especially the former, as almost immediately preceding the basal age of Vellayan Iruppu-II, that is, the seventh-eighth century A.D. which indeed, from the literary status of this work broadly, had already been viewed as leading one to. In this respect, therefore, the excavated evidence has reopened the question of the actual age of this epic work - as we now have it - which is indubitably post-Sangam and seemingly also not much removed in time from the date of the lowest level of Vellayan Iruppu-II. This may be taken as one of the positive contributions of the excavations of Kaveripattinam in its pre-mediaeval localities, in much the same way as the earliest localities excavated, namely, Kilaiyur, Vanagiri, and Manigramam and their structures and antiquities had taken us directly into the 'Sangam' age of Karikala and the quondam age and locale of the event narrated in this grand epic, viz.. the first second century AD

(d) Stone Objects

Six objects of a variety of stone material were recovered from this Buddhist complex at Pallavanisvaram and Vellayan Iruppu II respectively three each, and reveal their functional, location and usage intended.

PALLAVANESVARAM (fig. 35, 1-5)

The oldest among these, of layer 3 was a slatey or schistose rock in the form of a nodule which, being broken, showed the fine grained core. It is not clear if this had been put to any specific usage but parts of the nodule by the smooth man-made surface polish, might have been used as a whet-stone for assaying the quality of a gold ornament by a goldsmith. It was liable to be placed in late stage of Period II of Kaveripattinam and recalls the use of the material and mode from other contemporary sites like Nagarjunakonda.

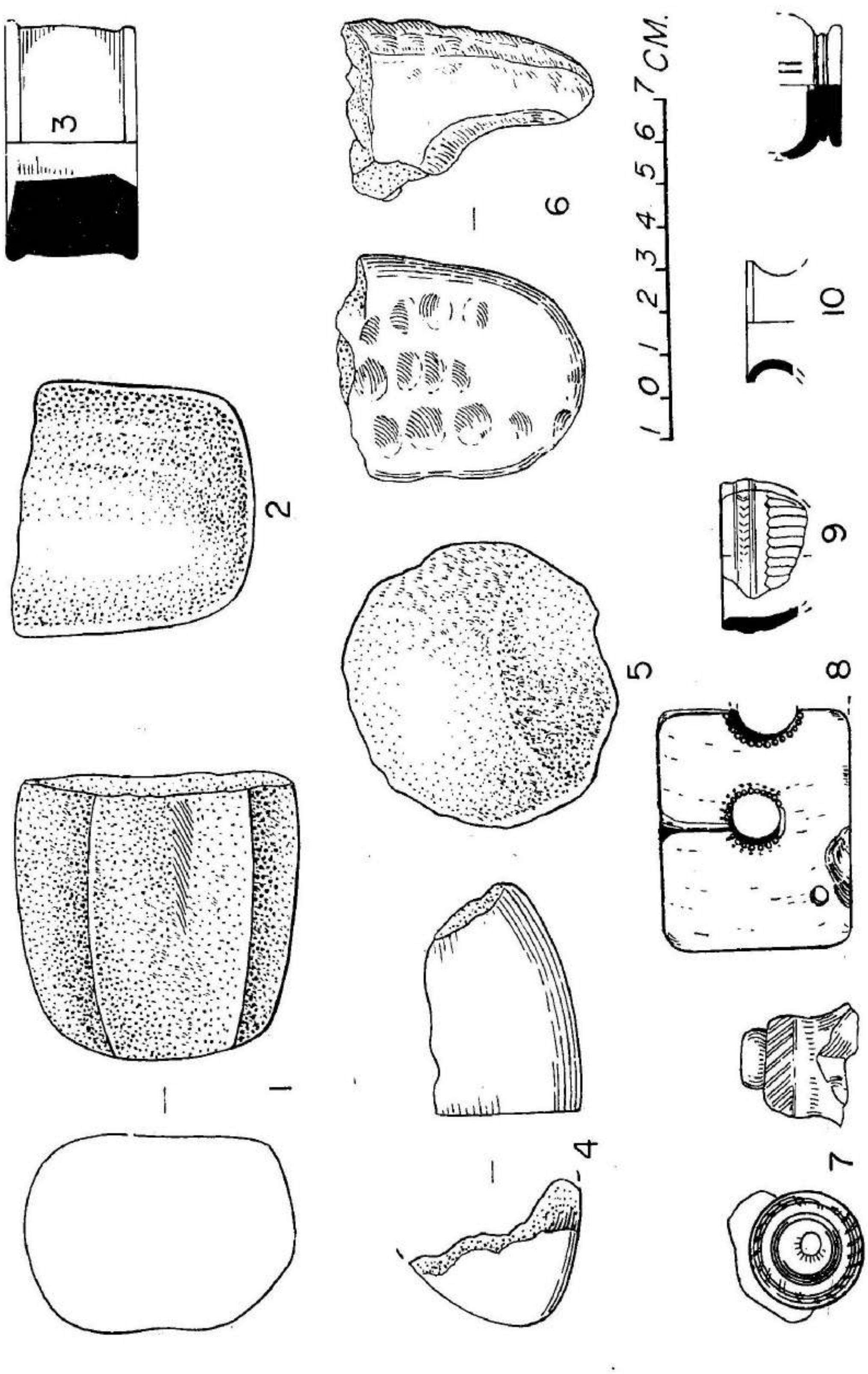

FIG. 35. *Stone objects*

The other two occurring in layer 2 were firstly a pestle of granite, partly broken but with the surface around showing heavy smoothening and polish, with the terminal parts having marks of wear and tear, should have been a household equipment. The other second piece was a small limestone receptacle (*karanda*) with what appears to be an obliquely collared rim, widening into a deep body. Limestone had been used for relic caskets as well as for keeping beauty aids or toiletry or unguents, and this piece was obviously for the latter kind of usage.

There were also a few indeterminate worked stone pieces of general use as grinders etc.

The discovery of a limestone *Buddha-pada* though in a tilted and neglected condition in the debris layer of the end of the early monastic phase here and prior to the later Buddhist temple phase, was clearly of significant importance (pl. XIV). It was lying upside down between the above two structures and was by its location, not observable by the builders of the Buddhist temple lay out. Nevertheless, with its date both intrinsically and by its position, there was no doubt that it belonged to the 'Monastic wing phase' at this site. It forges a clear link between Krishna Valley especially when we note the transactions of monks like Buddhadatta here. It was carved on the typical Palnad limestone from Nagarjunakonda region which by itself made it an imported material.

This *Buddha-pada* not only carries the usual auspicious marks on the feet, but has a lower peripheral set of panel-friezes also (not so far fully reported) all around representing the scenes of the important events in Buddha's life, as traditionally depicted in the contemporary Buddhist panel and medallion carvings at Nagarjunakonda. It starts from his Nativity, then depicts the great renunciation *(Mahabhinishkramana),* then the first sermon at Mrigadava (Sarnath) and finally the *Mahaparinirvana* or passing away, this last significantly being represented, not in the figure of the Buddha in reclining posture as in a later period, but as the scene of a Chaitya worship by devotees. By this token, one might not be far wrong that, despite the early *Mahayana* phase, it represents, it could be considered as belonging to the denomination of the *Chaityakas* or the *Mahaviharavasins* of Nagarjunakonda (or of their ilk in Tamil Nadu, at this centre). This brings into relief the rise of the Buddhist temple in a late Mahayana phase (sixth-eighth century A.D.) in the second phase of Pallavanesvaram which probably should have been full of stucco figures of the Buddha, Bodhisattvas and, as we know also, of bronzes (like the gilded Maitreya from here). The *Buddha-pada* contains also a narrow deep socket receptacle carved between the two big toes of the *pada,* within which customarily some relics, gold flowers etc., were deposited and closed with a small lid piece, as noted from Nagarjunakonda. Thus the relic association of this *Buddha-pada,* comparable with that of the Dharani Vihara at Nagarjunakonda may also forge another link marking its use here at Pallvanisvaram around fourth century A.D. or a little later, as the chronology of the *vihara* phase, by other means, seems to show also. The quality of the Palnad limestone appears to be of poorer quality than that seen at Nagarjunakonda and could have been from the Nellore (district Prakasam, Andhra Pradesh) area and shows heavy exfoliations. The fact that pilgrims and votaries from Tamil Nadu (Dramila) also find mention in the inscriptions at Nagarjunakonda, reveals the close contacts that Tamil Nadu

centres like Kaveripattinam or Nagapattinam had with Andhra Buddhism in the Krishna Valley in the fourth-fifth century A.D. It thus became a most persuasive and tangible evidence of the status of the Pallavanesvaram Buddhist monastic phase.

It also might show how almost upto the period of the use and worship of this *Buddhapada* at Pallavanesvaram the Chaityakas who refrained from depicting the Buddha in human form for worship but preferred the symbolism of the stupa to depict his corporeal presence had dominated at this monastery. In this light, the occurrence of the tiny Buddha image in bronze, also found from the debris layer of almost coeval date will have to be assessed. The possibilities are either that both Chaityakas and other denominations co-existed in this monastery, each according to its leanings, or that the former would be given chronological priority over the context of occurrence of the two divergent usages, the latter having taken over the administration of the Buddhist complex thereafter and proceeding later to erect the temple for the Buddhist image worship here in a spectacular or monumental scale. On the basis of the Nagarjunakonda tradition, both the possibilities would have been equally valid.

VELLAYAN IRRUPPU II (pl. XXXIV; fig. 35, 6-11)

The three objects from Vellayan Iruppu (in its oldest occurrence) comprise, firstly, a fragmentary and part of a stone pestle made of gneissic granite with smoothened as well as worn out surfaces (no. 6) and the remaining two were in a later layer and comprise respectively the shallow lid of a limestone receptacle and also made of the same rock, with a flat rim, thickened internally and tapering to a shallow body (no. 7).

Its rim would have rested upon the inner ledge of the body part of the receptacle. It might have contained a button knob on the top for easy lifting.

The third piece was by far the most carefully produced artefact, made of a banded soap-stone and contained two major perforations in the central part of a flat tablet-like bit (No. 8). Of these, the slightly larger one nearer to the centre of the lengthwise slab appears to have snapped. A slight picking along the edges of this piece is for grip, in relation to a complementary slab that might have rested over it, with the circular slots functioning like moulds for certain types of manufacture of objects like either jewellery or coinage. The intact circular hole also carries a thin channel seemingly for drawing the molten material or surplus. There is one perforation which had gone only half way through, towards the corner, which might suggest a corresponding perforation at the diagonal end, by the process of which the upper and the lower slabs could be pinned together in a tenon-arrangement. The object was probably part of the equipment of a goldsmith or lapidar or a mint, and is ascribable to the eleventh-twelfth century A.D.

A few fragmentary limestone receptacle pieces were also recovered from middle to upper layers (no. 9-11).

(e) Bronze and Copper objects (pls. XXXV-XXXVI; fig. 36)

There were two bronze specimens from the excavation respectively of a small seated Buddha figure and a fragment of a hand of another similar small figure, both from Pallavanesvaram (no. 1-2). The excavations also yielded a number of copper objects of which eight are noteworthy. They comprised five from Vellayan Iruppu-II and three from Pallavanisvaram. The three latter objects were respectively a vessel (no. 3) and two rings (no. 4-5), belonging to layer 2 and 1 variously. The objects from Vellyan Iruppu-II included a rattle with a slit and a loop for suspension from layer 3 (no. 6), and the breast portion of a female figure from layer 4 (no. 1), apart from a copper wire and a fragmentary ornamental bangle piece.

The bronze objects are first described below before the eight other copper objects could be noted.

The most outstanding religious object in bronze from Pallavanesvaram coming from layer 2 forming the debris layer sealing the period of activity of the Monastic wing, was the figure of a seated Buddha. It was in *dhyana* pose, palm over palm, with an attractive rising *karanda*-like hair loop and an oval face, distended ear-lobes, strongly recalling in style and hair-do the medium-to small-sized bronzes from Amaravati in the fifth-sixth century AD now in Government Museum, Madras. There is no doubt that both during the period and after the Ikshvakus of Nagarjunakonda, there should have been close liason between Buddhists in the Krishna Valley and Tamil Nadu, the important centres in Tamil Nadu being, Kanchipuram and the lower Kaveri Valley. This bronze should have been a personal object of veneration by a monk who lived in the monastic wing at Pallavanesvaram.

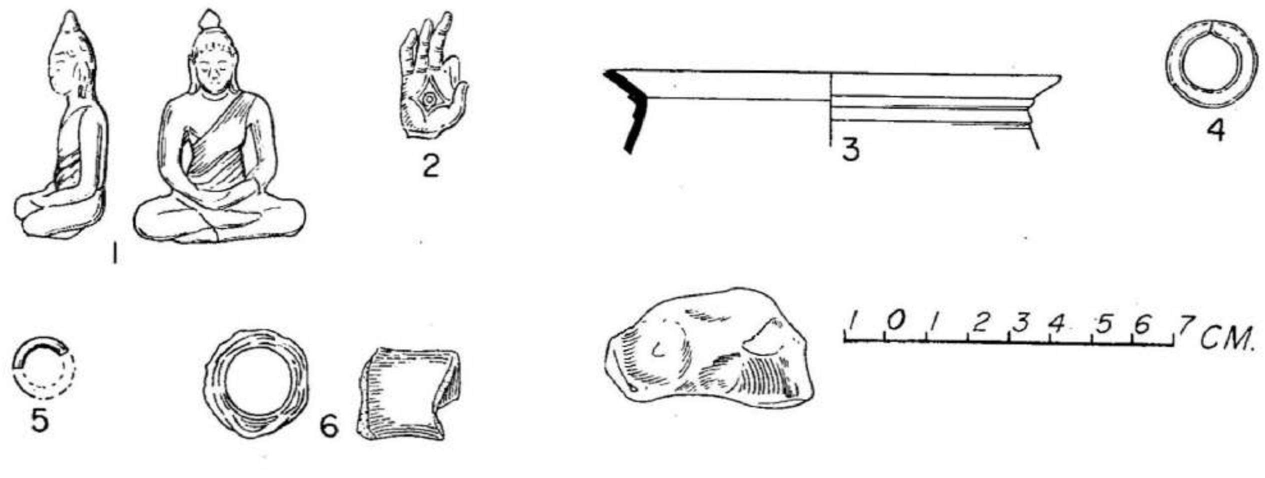

FIG. 36. *Bronze and copper objects*

The other object-a fragment of a hand was in the *dharmachakra pravartana mudra* and should have belonged to an image of the Buddha. The palm is decorated with auspicious mark. The piece

shows a remarkably realistic and sensitive rendering of the fingers and the supple contouring of the palm and bent fingers it portrays and was somewhat more developed in its style thus to the other intact Buddha image and together, they reveal the local bronze casting activities in the early historic period, which eventually led to the most beautiful Imperial Chola bronzes for Buddhism and brahmanical religion alike, from especially the nucleus part of the lower Kaveri Valley in the Chola home-stretch.

1. Buddha image, solid, in *dhyana* pose, layer 2, Pallavanesvaram (no. 1)
2. Hand of Buddha in *dharmachakra pravartana mudra,* layer 1, Pallavanesvaram (no. 2)

Copper objects

1. Pallavanesvaram : piece of a vessel with straight edged rim with grooves on the exterior portion, from layer 2 (No. 3)
2. Pallavanesvaram : fragmentary ring of round section From layer 1 (no. 4)
3. Pallavanesvaram : fragmentary ring of flattish section, from layer 1 (no. 5)
4. Vellayan Iruppu- II, : rattle with a slit and a loop for suspension, similar to the one found at Maski, Andhra Pradesh (*A. I.*, No. 13, p. 114, fig. 34/7). From layer 3 (no. 6)
5. Vellayan Iruppu-II : fragmentary bangle piece of flattish section, ornamented, from layer 3
6. Vellayan Iruppu-II : fragmentary bangle piece of circular section, from layer 3
7. Vellayan Iruppu-II : wire of indeterminate usage, of roundish section, from layer 2.
8. Vellayan Iruppu-II : a knob representation, with the bosom of a female figure, from layer 1 (no.7)

(f) Coins (pls. XXXVII-XXXIX)

As already mentioned, the earlier periods of life at Kaveripattinam represented by urn burials at Vanagiri, had given two punch-marked coins, on the surface level. In their original context they would be suggesting a period coeval with the first two centuries of the era before Christ.

They were of two different shapes (1) rough circular and (2) elliptical. They had become totally worn out and the individual symbols could not be made out. They were of sizes 1·4 cms and 1·7 × 1 cm and weighed 2·13 and 4·46 gm. The elliptical one also bears the marks of trimmings of the sides, to be conforming to the weight. It is even more worn out than the circular one. These punch-marked coins may be ascribed in Period I A and in the nature and context of their provenance under highly adverse conditions of movement of deposits under water, cannot be more securely dated. However, their upper limit may perhaps be taken in the close of the first century B.C.

In addition to the above, a considerable number of coins had been recovered during the excavations and from the surface layers. In the earlier trench excavated in 1963 from Vellayan Iruppu (called I as distinctive from the trench excavated in 1973 called Vellayan Irruppu-II), a Roman

coin from the surface had been collected and it had given rise to speculation not only to the term Vellayan Iruppu, which was variously taken as signifying the locality of the foreigners or that belonging to Balarama, the elder brother of Krishna, called 'Vellayan' in Tamil literature.

It was also thought that this locality might yield earlier cultural deposits of the pre-Christian periods. But in actual resumed excavations in 1973 when the site Vellayan Iruppu-II was excavated, it turned out to be a pre-mediaeval and early mediaeval site and indeed the most prosperous and stable habitational locality at Kaveripattinam. Its rich antiquities and pottery types and coins of the Cholas, besides, showed its significant contribution to shifting activity at this port-town, in the periods after the Buddhist monastic activity of Pallavanesvaram.

Hence the occurrence of coins in the excavation, other than the punch-marked and Roman coins, which were chance through important finds, had been restricted to Vellayan Iruppu-II within Melayur village limits, and had been mostly of the Chola times, especially the period of Raja Raja-I (A.D. 985-1014). The frequency of these coins was from the two penultimate layers namely layer 4 and 3, the lowest layer having been stratigraphically and culturally of pre-900 phase probably stretching backwards for about a century or more, and was itself a phase of transition and shift from the more coastal locations occupied in earlier phases, apart from Pallavanesvaram (also in Melayur limits) Buddhist complex, having been the period bridging the earlier easterly sites and the mediaeval habitation of Vellayan Iruppu.

The Chola coins (totalling to upwards of twenty in number), in this limited excavation, between layers 4 and 1, however had been consistently significant in frequency and reached their highest number in layer 3. The terminal point of the site has to be ascribed, despite the continued occurrence of the coins of Raja Raja I, as extending upto the twelfth century A.D. as coevally also reinforced by the Sambapathi Amman site data (a site which itself spans the period from the early historic lowest strata, with a hiatus, to the mediaeval phase beginning from the ninth century A.D.) upto the twelfth century A.D. Surface layers however had yielded Vijayanagar and even Ramnad Sethupati - ninteenth century A.D. coins.

An inventory of the coin finds from Kaveripattinam is given hereunder :—

PUNCH-MARKED COIN

Vanagiri

1. Shape : rough circular
   Size : 1·4 cm dia.
   Weight : 2·13 gm
2. Shape : elliptical
   Size : 1·7 x 1 cm
   Weight : 4·46 gm

Mediaeval Copper coins

Manigramam

1. Obv. Standing figure of the king

   Rev. Seated figure of the king with the legend Rajendra

   Metal : copper, size: 1·8 cm, weight : 3·4368 gm (Popularly known as standing figure/seated figure type or Ceylonese type of Raja Raja)

2. Obv. same as no. 1

   Rev. same as above

   Metal : copper , Size: 1·8 cm , weight : 4·0502 gm

   Shape : round

3. Obv. tiger with uplifted tail

   Rev. standing elephant

   Metal: copper, size: 1·5 cm, weight: 1·0714 gm

   Shape : round

   (This coin seems to be unique and of an unpublished type, belonging to the Early Cholas).

4. Obv and Rev: not clear, highly defaced.

   Metal : copper, Size: 0·9 cm, weight : 1·5672 gm

   Shape : round

Vanagiri

1. Obv. and Rev : highly defaced and cannot make anything

   Metal : copper, size : 1·7 cm, weight: 2·1008 gm

   Shape : square

2. Obv. standing tiger with uplifted tail

   Rev. : elephant

   Metal: copper, size: 1.1 cm, weight : 0.7620 gm, shape : square (broken)

   (This square coin belongs to the early Chola period)

3. Obv. and Rev. : same as no. 2

   Metal: copper, size : 1·3 cm, weight : 0·3064 gm, shape : square

   Belongs to the Early Chola period

4. Obv. Standing figure of the king

   Rev. Seated figure with the legend which is defaced

   Metal: copper, size : 1·5 cm, weight: 3·4538 gm,

   Shape : Round

5. Obv. standing figure of the king

   Rev. defaced

   Metal: copper, size: 1·4 cm, weight : 2·4786 gm, shape : round

   Probably the standing figure type of Raja Raja

6. Obv. and Rev. highly defaced

   Metal : copper, Size: 1·00 cm, weight: 0·6138 gm

   Shape : roughly circular

7. Obv. and Rev: highly defaced.

   Metal: copper, Size : 0·9 cm, weight : 0·5936 gm

   Shape : circular

Pallavanesvaram

1. Obv : standing figure of the king

   Rev: seated figure of the king with the legend 'Sri Rajaraja' in Devanagari characters.

   Size : 1·8 cm, weight : 3·7514 gm, Shape : circular

2. Obv. and Rev: same as above

   Size : 1·6 cm, weight : 4·0966 gm, Shape : circular but on two sides it was rubbed and made straight.

3. Obv Rev: Same as above

   Size : 1·8 cm, weight: 2·7220 gm, shape : circular

4. Obv. and Rev: same as above

   Size : 1·6 cm, weight : 3·3278 gms,
   Shape: circular

5. Obv. and Rev. same as above

   Size : 1·6 cm, weight : 3·3278 gms,

   Shape : circular

6. Obv. standing bull with Sun and Moon on the top
   Rev. inscribed legend in Telegu/Kannada characters reading Devaraya
   The coin belonged to the Vijayanagar king Devaraya, probably Devaraya II
7. Obv and Rev: highly defaced
   Size : 1·3 cm, weight : 0·7142 gm, Shape: circular

8. Obv and Rev: Highly defaced
   Size : 1·6 cm, weight : 0·5106 gm,
   Shape : square (broken)

Vellayan Iruppu

1. Obv. standing figure of the king

   Rev. seated figure of the king with the legend 'Sri Rajaraja, in Devanagari characters

   Size : 2 cm, weight ; 4·1194 gm, shape : circular
2. Obv and Rev: same as above

   Size : 1·6 cm, weight: 3·8330 gm, shape : circular
3. Obv and Rev. : same as above (defaced on the reverse)

   Size : 1·4 cm, weight: 3·6062 gm, shape : circular
4. Obv. and Rev. : same as above (defaced on the observe)

   Size : 1·7 cm, weight : 3·7532 gm, shape : circular
5. Size : 1·4 cm, weight : 1·6392 gm, shape : circular
6. Obv. two standing figures

   Rev. *linga*

   Size : 1·5 cm, weight : 3·2904 gm, shape : elliptical

   This coin belongs to the Sethupatis of Ramnad
7. Obv. standing figure of the king

   Rev. not clear

   Size : 1·2 cm, weight : 1·4578 gm, shape : circular
8. Obv. and Rev : not clear

   Size : 1·1 cm, weight : 1·1134 gm, shape : circular

(g) Iron object (pl. XL ; fig. 37)

Iron objects, in the conditions prevailing in the locations of site at Kaveripattinam, were bound to have been badly affected by atmospheric and sub-soil water reaction and should have largely become pulverised and fragmented, out of idéntity. Nevertheless, some reasonably intact pieces have been found. Eight of them were from the latest site of the habitation, namely Vellayan Irruppu and one significant example from the site of Pallavanisvaram, in layer (2). Typical iron objects associated with Megaliths or urn burials were not noticed in any of the early sites excavated like Kilayur or Vanagiri or Manigramam, of the habitation class. Dealing with the last mentioned first, it is a fairly well preserved example of a flattish cold chisel, of rectangular section throughout, and it appears to have got broken towards the upper half of the implement. Whatever is remaining has neither lost its almost mint condition nor its essential specific gravity, although it seems to have

slightly got expanded in thickness due to prolonged oxidisation. The context in which it is found pertains to the terminal stages of the first phase of the monastic complex, leading to the erection of the Buddhist temple site of the second phase. This temple, as has been indicated elsewhere, should largely have used timber and tile work, besides its basic brick work of its lower walls and the cold chisel under description should have been intended or was applied for usage during the erection of timber structure of this phase. Its dimensions are 5·06 × 2·07 × 1·01 cm.

It is also possible to presume that, by its rectangular cross section and linear surface, it was ideal for cutting and planing of timber and thus different from circular-sectioned short chisel that is employed generally for stone cutting by stone sculptors. It is very likely also that this chisel was mounted into a wooden handle for appropriate grip, on the top of the latter which the knock would be administered preferably by a wooden hammer. It is, therefore, an important technological equipment of the early historical period around sixth century A.D.

The other identifiable specimen from Vellayan Iruppu, is a fragment of hat appears to be a table knife whose terminal part it is representing. It is of lenticular cross section and is narrowing and curving towards the tip which also is deliberately rounded, not unlike that of a bread knife. It is the convex side that has been utilised for the cutting edge and has become swollen in its thickness and got partially flaked off also due to oxidation under very humid condition of the soil. This knife tip is liable to be placed in the eleventh-twelfth century A.D.

Of the rest, belonging also to Vellayan Iruppu and ranging in location from layer (4) to layer (1) in the nature of their usage, they can be considered variously as heavy nails with or without a knobbed head. The knob itself were of several shapes, either bud-shaped or globular or flattened elliptical or featureless and together comprised five examples. Of the remaining two of this site, both belonging to uppermost level, one of them is a part of a dagger blade with lenticular cross-section, badly oxidised in its core ; and the other was seemingly an iron jingle of large size perhaps tied to the neck of cattle, and has got flattened by pressure of the deposits, but still retained a narrow slit opening, within which the metallic or other jingle piece would have been laid. It thus indicates a widely prevalent usage for cattle in this period in Tamil Nadu.

It may be noted that despite their obvious functions for fastening on wood, iron nails in a part of the Tamil Nadu, as the present one, where timber had been used extensively along with tile, would not have been too widely employed in preference to tenons and pins made of wooden pieces themselves, for the carpenters part of structures, and thus non-occurrence of profuse iron nails, unlike in any inland mediaeval site, should not occasion much comment.

(h) Miscellaneous objects (pls. XLI - XLIV; fig. 38)

Apart from the terracotta figurines described above, various other terracotta objects including gamesmen, spools, discs of both pierced and unpierced conch shell etc., were recovered in the excavations. Spools with flat profile have one of them with a depression on one side of the surface,

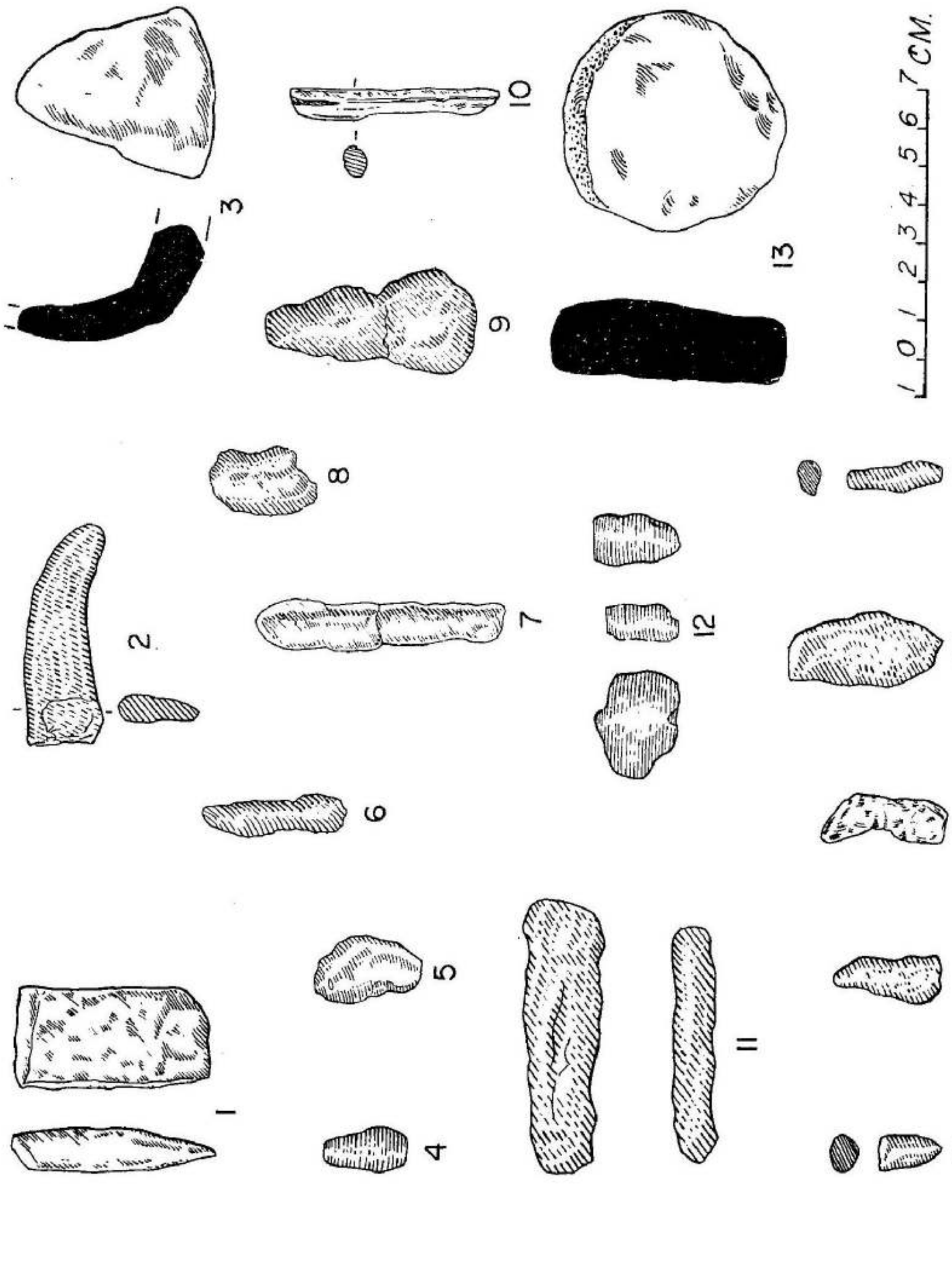

FIG. 37. *Iron Objects*

and some of them have been used as ear ornaments. In one case, a potsherd was made into a roughly circular shape by rubbing and have two perforations at the centre probably a gaming piece. Ear ornaments of varying sizes were also encountered in the excavations.

In addition to them, numerous stucco figures and fragments, moulded bricks, terracotta mould, plaques were also recovered from the excavation.

Pallavanesvaram yielded several exquisite stucco heads and body fragments of door keeper, attendants and rearing lions, besides stucco finished architectural parts which indicate the manner in which these could have been more appropriately utilised in the Buddhist temple to which phase and period these stucco figures stylistically belong.

A very accomplished nature of stucco craft as reflected by the beautiful contemplative head with the half closed eyes and parting lips and smooth modulation and what appears to be a forehead tiara band with a central gem at this place, would not only highlight the specific brick architectural phase of the Buddhist temple but also the importance of Kaveripattinam at that time. These appear to have been treated with painted exterior surface.

Also somewhat unique from layer 4 is a fragmentary remnant of terracotta mould which has got a button knob on the underside for grip and the upper side is provided with sockets and design work suggestive of its being used as a mould. This is a variant type of the standard mould varieties for jewellery made on stone which are also found at Nagarjunkonda, in the goldsmith workmanship area of the site (The present examples were, however, on irregular terracotta, but the function all the same and its efficiency is obvious.). As the depression of the moulded parts with embossing seen within would, in the positive, produce an embossed outline with depression in the middle, it was seemingly intended for inlay or setting of gem stones, within such depression in the position.

The stucco fragment (pl. XLIII) or Pallavanesvaram has also its own story to tell. The stratum in which it is found marks virtually the partial ruination of the monastic set up, resulting in considerable debris gathering around and as such this material may virtually belong to layer 3 proper and was in a state of casual usage by the agencies then in charge of the monastic complex. Changes apparently were also in the offing in the doctrinal approach to the evolving later Mahayana stage.

The production was of a true 'stucco' technique, by which term is implied a build-up of the core in brick bats to the required rough out and a heavy concrete-like plaster applied to it to fill in the crevices and to model the required image or figure, and giving a finishing fine coat of lime, over which the appropriate colour scheme for the theme or the subject was to be executed. It is seen that this stucco fragment is also overlain with a thick plaster-coat which had completely submerged it and was not in continuation of recolouring it, as of old, but of closing the memory of the inner painted surface. This therefore, introduces the element of change in the situation which is stratigraphically relevant and is structurally heralding the second important phase of the monastic site, with the erection of a Buddhist temple of an elaborate and seemingly lofty character, further to the south of the site close to the present road leading to the beach via the habitational part of Melayur limits.

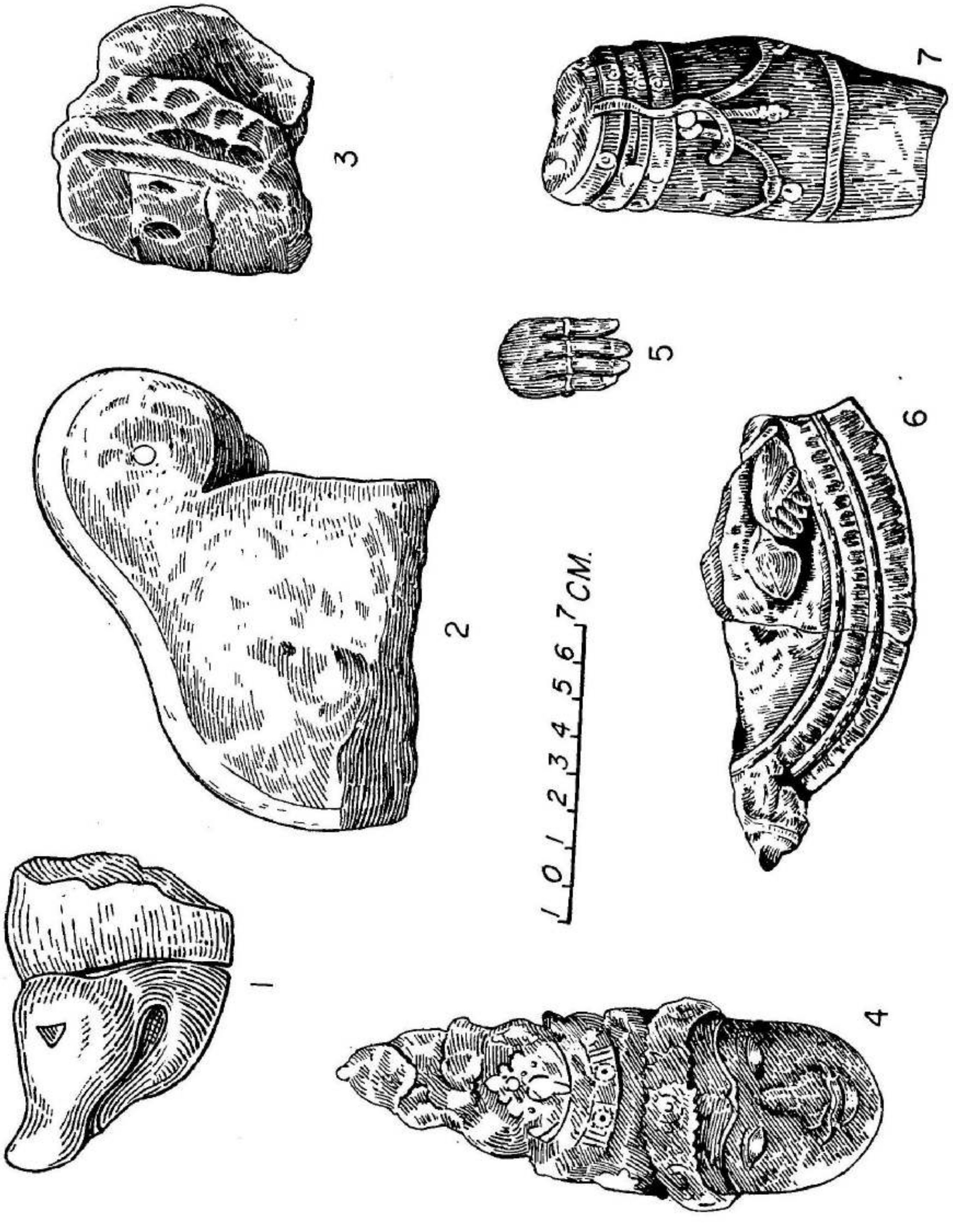

FIG. 38 Miscellaneous objects

The painted lower surface introduced atleast a three-color scheme of green, pink, and deep vermilion red, and from whatever little is seen appears to present a schematic *mandala* type of design perhaps related to the development of the later Mahayana situation. The plaster fragment is thus in transition and only tends to emphasise the continuing maintenance, in whatever form, of the monastic establishment.

Of special interest from layer 2 is the advent of terracotta moulded bricks used for architectural ornamentation in the monastic site. The three pieces available show variously a large stepped fragment with flat vertical and horizontal faces, another seemingly the *kumbha* element of a pilaster with grooved top and well curved sides, and a third of squarish shape with right angular corner grooves on the sides and the top, dividing the section into three distinctive facial parts-seemingly part of the pilaster component as base. These would reveal, for the first time, brick and stucco ornamental repertory in religious architecture in Tamilnadu at this site. The fragments, in each case, carry layers of lime plaster adhering to their sides where they have been laid on the respective parts of the structure bonding them with their upper and lower components.

Of great importance from the point of view of the development of the sensitive art modulation for the common man is the fragmentary piece of what would appear to be a large terracotta plaque whose marginal frame is decorated by beadings and ribs and which was seemingly having a hollow body of rather flattened kind on the rear. Within this frame work which is seemingly created by decorative elements reflecting a *makara* ornamentation, is found the representation of the right arm of the figure holding a lotus and seemingly showing also either the bangles on the wrist or the drapery of the *sanghati*. It is of very thin laminated terracotta whose interior within the frame is also painted with green colour for the background and red slip for the body of the figure. It is difficult to identify the figure, but taking into account its vanue, namely, Pallavanesvaram and the period being around sixth-seventh century A.D. to which layer 1 pertains, it is not unlikely that this figure is that of a Bodhisattva Padmapani or Avalokitesvara.

CHAPTER VII

CHRONOLOGY

It is interesting, as noted earlier, in the text of this Report on excavation that there had been a significant relationship of the changing soil-profile from the alluvial sandy layer and overlying silt deposit, at the earliest stage of habitation, on to the undulating heavy dark clayey horizon and further on the hard earthen early historic cultural deposits on them. This is particularly seen by the dark clay not containing any cultural material, in its body, while the sand and silt, where occupation started on it as in Kilayur (Mangaimadam) and Vanagiri (inlet-sluice location), cultural material like pottery were available in these very deposits. This was the changing port-city profile of the activity locations, *beginning* from a mere port village practising also urn burial culture and equipped with a wooden pole-built boat-jetty for berthing boats in the backwaters[1].

The erection of the brick built quay-like wharf platforms appears to have followed, after quite a while, seemingly after the close of the first century B.C. or slightly later. This late start of the wharf platform in relation to the wooden-pole precursor may also partly explain why Roman Arretine ware has not been seen so far in the explored or excavated pottery from Kaveripattinam. Arretine begins from the last pre-Christian century and perhaps at that time, Kaveripattinam had no adequate facility for Roman halt of boats, and maritime activity, might have been only along the local coast line, through the wooden pole-jetty. The occurrence of the 'Rouletted' ware signifies the advent of the brick-built wharf which would have attracted regular halts for the roman boats, in its backwaters probably after the very close of the first century B.C. in the very beginning of the Christian era. One cannot strain at the stages closer than this.

The erection of the inlet sluice at Vanagiri flowing northeast - southwest would, again, be pointer to the organisation of a large water reservoir to its south, utilising perhaps the natural depression of land in this southerly village of South Vanagiri and Kilaperumpallam. The inlet channel, besides, would have been mainly to take away the excess storm water of the river Kaveri (more like a 'Kalingu' or weir which became an important activity later, in the early Pallava irrigational activities). The broad coevality between the brick built inlet channel here and the wharf platform at Kilayur cannot be doubted on purely structural and chronological basis of the culture of the two sites.

The advent of monastic life which, again should have been stimulated by the Krishna valley centres like Nagarjunakonda (where again, a comparable device for water drainage like Vanagiri

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[1] A similar situation obtains in many of the other ports on the Cholamandala coast like Arikamedu, Marakkanam and Mamallapurm. In the last, it was the present hamlet of Punjeri that formed the berthing point for boats in the wide and shallow backwaters which even today (as Buckingham canạl) separate it from the Mamallapuram town and the entry point of the boats would have been through the inlet from the sea directly linking it and located now between the two parts of Kalpakkam Reserved area.

inlet channel, occurs and where inscriptions refer directly to 'Dramila' or Tamil monks in their own monasteries there, like those from Kashmira, Gandhara, China, Chilata etc., had been the *next* stage of outstanding development of the hinterland of Pallavanisvaram, between the end of the third century A.D. and the beginning of the fifth century A.D. This activity, despite a break for a few decades perhaps in the late fifth or early sixth century A.D. seemingly by sea-incursion, continued unabated in the monastic area of Pallavaṇesvaram and led to a steady rise in the demographic and socio-religious expansion, as seen at Vellayan Iruppu locality in the same Melayur revenue limits, subsequently, linked with the rise of the Imperial Cholas of Thanjavur, farther west in the Kaveri valley.

A conjectural reconstruction of the land profile has been visualised in fig. 3 which spans the stretch of habitation from Manigramam which was the innermost hinterland centre of Kaveripattinam port-city, down to the sea beach, near where the river Kaveri debouches into the sea, covering the habitation of Melayur both Pallavanesvaram and Vellayan Iruppu), Kilayur and Vanagiri, in all of which some localities had been excavated.

This stretch is mainly after river Kaveri had crossed the present road to the sea front, off Sembanarkoil, and dips south-eastwards. The Manigramam to Kilayur is an approximate stretch of 2.75 km, and to the sea beyond another 0·25 km totalling to about 3 km or more. In this stretch, the thickness of the sub-soil horizons, as well as the cultural deposits on them, vary from one excavated site to another. The high point is between Pallavanesvaram and Vellayan Iruppu and cultural deposits accordingly show the largest number of layers, not to mention the thickness of the sub-soil clay horizon itself above the sand. There is a dip eastwards towards Kilayur and Vanagiri, since the water level is regularly struck almost immediately below the sea level. The average rise of the gradient seems to be approximately 1 m over 0·25 km which is 1/250 m gradient. The littoral shows the occupation earliest, as part of the port-village activity and the hinterland towns link it up in the succeeding periods of habitation over a total range from 250 B.C.— sixth-seventh century A.D.

The location of the wharf and the inlet channel at Kilayur and Vanagiri, as related to the Neidavasal gate for entry into the backwaters to Kilayur ((Mangaimadam), would also suggest considerable reclamation of land in relation to water bodies (both natural and impounded) in the four centuries from 200 B.C. to 200 A.D., and habitations are seen successively overlapping with the subsequent stages of occupation in the hinterland, through comparable pottery and antiquity range.

It is perhaps this that is also reflected in the literary description of Puhar, in the Epic *Silappadikaram* where its chief zones of activity had been designated as Pattinappakkam and Maruvurpakkam. The former, by its very name, should stand for the coastal port zone where the river joins the sea, while the latter would stand for the hinterland suburbia, called so again by the 'affiliation' ('Maruvur') of these locations, to the port zone, for their socio-economic stamina. Kilayur and Vänagiri thus constituted the former, while Pallavanisvaram and Vellayan Iruppu (both of Melayur) formed the latter, Manigramam had been liaising with both the zones, through its commercial thrust.

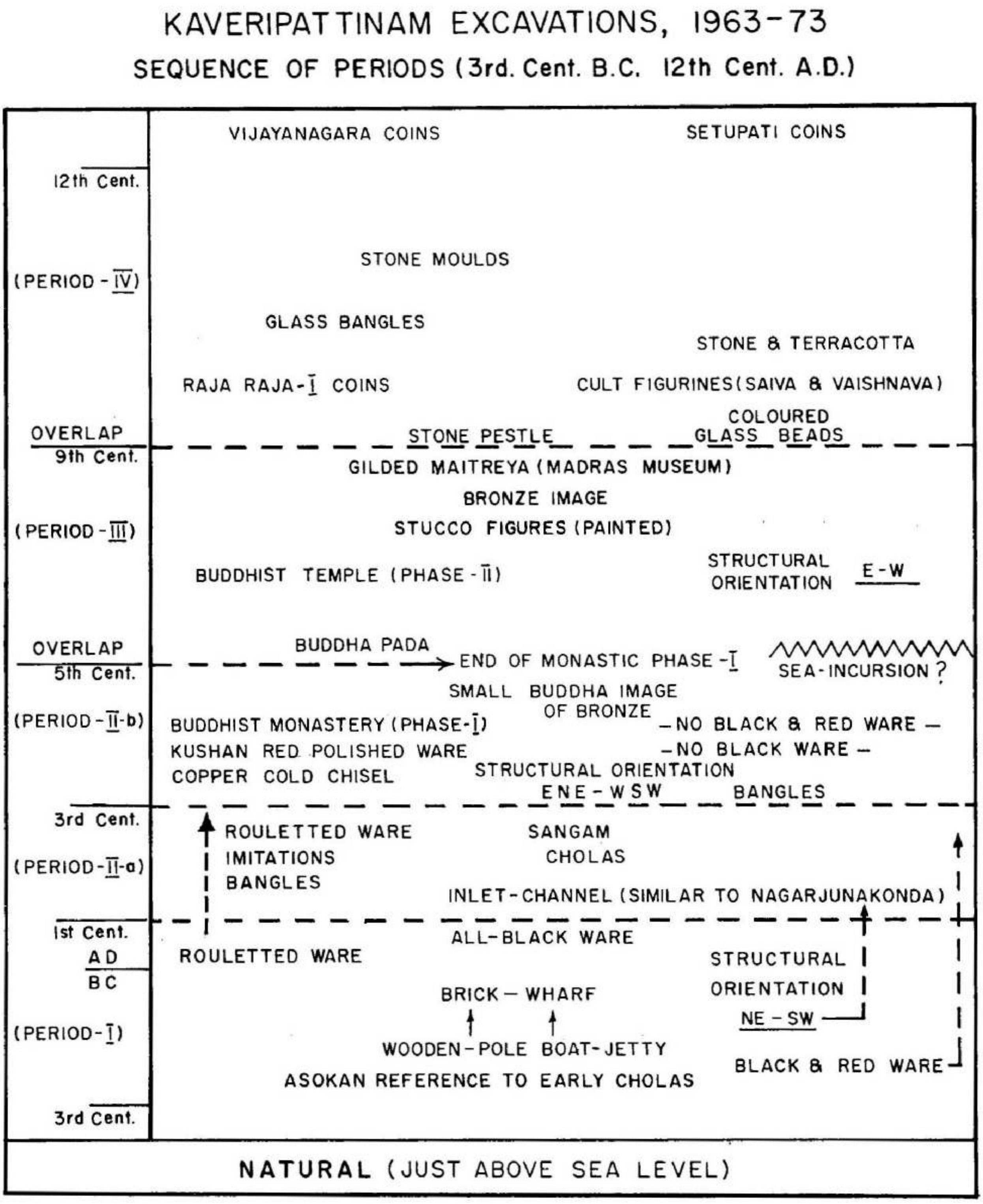

KAVERIPATTINAM EXCAVATIONS, 1963-73
SEQUENCE OF PERIODS (3rd. Cent. B.C. 12th Cent. A.D.)
VIJAYANAGARA COINS
SETUPATI COINS
12th Cent.
STONE MOULDS
(PERIOD - IV)
GLASS BANGLES
STONE & TERRACOTTA
RAJA RAJA-I COINS
CULT FIGURINES (SAIVA & VAISHNAVA)
COLOURED GLASS BEADS
OVERLAP
9th Cent.
STONE PESTLE
GILDED MAITREYA (MADRAS MUSEUM)
BRONZE IMAGE
(PERIOD - III)
STUCCO FIGURES (PAINTED)
BUDDHIST TEMPLE (PHASE - II)
STRUCTURAL ORIENTATION
E-W
OVERLAP
5th Cent.
BUDDHA PADA
END OF MONASTIC PHASE - I
SEA-INCURSION ?
SMALL BUDDHA IMAGE OF BRONZE
(PERIOD - II-b)
BUDDHIST MONASTERY (PHASE-I)
- NO BLACK & RED WARE -
KUSHAN RED POLISHED WARE
- NO BLACK WARE -
COPPER COLD CHISEL
STRUCTURAL ORIENTATION
ENE - WSW
BANGLES
3rd Cent.
ROULETTED WARE
IMITATIONS
BANGLES
SANGAM
CHOLAS
(PERIOD - II-a)
INLET-CHANNEL (SIMILAR TO NAGARJUNAKONDA)
1st Cent.
AD
BC
ALL-BLACK WARE
ROULETTED WARE
STRUCTURAL ORIENTATION
NE - SW
BRICK - WHARF
(PERIOD - I)
WOODEN-POLE BOAT-JETTY
BLACK & RED WARE
ASOKAN REFERENCE TO EARLY CHOLAS
3rd Cent.
NATURAL (JUST ABOVE SEA LEVEL)

FIG. 40

Then, there was a temporary break down in activity around the fifth-sixth century A.D. This, it is surmised, could have been plausibly due to sea-incursion and it did not seriously affect the tenor of the activity cycle, except perhaps for a few decades. The more intensified suburban development from the seventh to the ninth-tenth reached its peak in the tenth century A.D. In the earlier period, besides, it was obvious that Kaveripattinam was not only a port-town but also a chief maritime centre, with a strength and character *of its own*, unrelated too closely, to the capital town of Uraiyur of the early Cholas, near Tiruchirapalli, from where the branching and delta formation by multi-pronged streamlets from the main river began. The triggering of an unprecedented activity appears to have been only from the eighth-ninth century A.D. which was also the historical stage when the inland town of Thanjavur on Vadavar, was becoming the capital town, superseding Uraiyur, from fifth century A.D. as evidences from the excavations at that site had shown. (*I A R 1964-65*, pp.25-26). The corresponding stratigraphy of Uraiyur, excavations had shown its Period - I from third-second century B.C. to first-second century A.D. and the Period-II upto the fifth-sixth century A.D., when there was a devolution of cultural remains without any new change or further civic growth. This fully sustains thus the stratigraphy of Kaveripattinam sites, especially by the fact that Period-II of Uraiyur showed the emergence of profuse red-slipped ware, which is *not* seen in Kaveripattinam, until the Buddha Vihara stage of Pallavanesvaram, that is until the fourth century A.D. at the earliest. Further, some trenches of Uraiyur (like URY-4) are said to have presented evidence of floods, and water-logging, with the occupation coming to an end, through the accumulated thick deposits of sand and clay. We do not know if this had any relationship to the suspected sea encroachment at Kaveripattinam, by which the valley and the river could have swollen beyond capacity. Period III of Uraiyur was full of ill-fired and often unslipped red ware, rammed clay floors and use of post-holes, apparently indicative of a poor order of life style in devolution from that of Period II, and virtually marking the end of Uraiyur, as a capital town, by the supersession of it by other centres further inside the delta zone, like Thanjavur under the Muttarayars first and later by the Imperial Cholas from the ninth century A.D. The corresponding change at Kaveripattinam shows a marked spurt in civic and urban activity.

In the sequel, the chronology of the port city of Puhar or Kaveripattinam, in so far as excavated evidences show in the different localities where digging was possible, would seem to have an *inter-locked* sequence (with several overlaps) across the centuries, broadly as detailed below going backwards into time (fig. 40).

Period IV (A.D. 900-1200)	Imperial Cholas of Thanjavur. Profuse Raja Raja I coins. The sizeable towns of Melayur and Kilayur colonised over compact clay horizon (maximum in-ward extension of residential Puhar). Sampapati Amman Temple *main-phase*.
Period III (A.D. 700-900)	Muttarayar-Pallava to Chola transition. Manigramam (later phase) and Vanagiri (late phase) also further

	colonisation on compact clay. Sampapathi Amman temple built over a quondam early historic horizon.
Period II (first-second century A.D. to sixth-seventh century A.D.)	Advent of Roman 'Rouletted' ware (without any Arretine ware occurrence) and imitations of it continued even on black and red ware. Red slipped (Kushana) ware seen at the lowest level of Pallavanisvaram. *Buddha Vihara* site, colonised on black compact clay. A temporary break in occupation activity (perhaps due to sea incursion) followed by the second phase of the Pallvanisvaram site with its Buddhist temple. Early phase remains below the foundations of Sambapati Amman temple. 'Sangam' Cholas (of Karikala line) continue with square coins of these Cholas. Inward extension of residential Puhar (Maruvurpakkam).
Period IIA (first century A.D. to third century A.D.)	Kilayur (Mangaimadam) brick wharf built; and inlet-sluice structure at Vanagiri built. Black and Red ware using people (besides an accompanying Red ware) settled on the silt level (below the black clay as now seen). Punch-marked coins. Manigramam a flourishing locality of hinterland habitation, yielding all-black ware also. Age of 'Pattinappalar' and the events narrated in *Silappadikaram*.
Period I (third century B.C. to end of first century B.C.)	Chola capital at Uraiyur, farther inland. Kilayur and Vanagiri villages (perhaps also including Mullaivayil) representing the residential town of Puhar (Pattinappakkam only). Early urn-burial using practices seen, associated with the typical Megalithic Black and Red ware fabric. Wooden pole boat-jetty provision made in Kilayur backwaters, driven into the alluvial sand around 250 B.C. Age of the putative Cholas (mentioned in Asokan edicts). Suburban location of Manigramam), Pallavanesvaram (Melayur), or Vellayan Iruppu (Melayur), both not yet coevally existing as habitations.

The incidence of the settlement pattern, progressively becoming denser, expanding and enriching its urban base could be broadly seen thus within the time bracket of Period II-a to Period IV, by the richest provenance of antiquities of early description and a prevailing pottery preference in each of the phases, including a variety of exotic wares, like Celadon and 'green glazed' ware of

South-east Asia, brick structures, terracotta and stone cult figures, beads of many types particularly on semi-precious stones and a variety of colours on glass and religious institutions, leading to enduring prosperity peaked in the mid-level of Period IV, but seen steadily declining after the twelfth century A.D. with the localities and indeed the port-city reverting back to a rural agrarian stage after the twelfth century A.D.

This picture will provide the framework of the 'Pre-Sangam', Sangam, post-Sangam (written Epic stage of *Silappadikaram* story, as now available, together with its sequel the *Manimekhalai)*. There is also no doubt that the epic story had its historical core in Period - II (a) which was the palmy phase of maritime trade and contacts with Sri Lanka, on the one side, and with Krishna Valley Buddhist monastic establishment (in two stages) in Periods II-b and III at Kaveripattinam itself, in Pallavanesvaram. Period II-b, will perhaps coincide with the advent of the first brick temples for brahamanical religion also, as at Pallavanesvaram itself, thus rendering its own appellation meaningful. The Period-IV stage was one of full resurgence of the Imperial Cholas especially under Raja Raja and the index of the close links between the capital town of Thanjavur and the port-town of Kaveripattinam represented in our excavations by Vellayan Iruppu I & II in Melayur. The post-twelfth century, in everyway was the swansong of this incessant habitational growth and urban sophistication, leading to the present status of Kaveripattinam. May it be stated, by way of abundant caution, and taking note of the fact that an ancient port-city like Kaveripattinam has every reason to have provided for a reasonably large scale constructional activity and a variety of habitational sectors, that future possibilities of the *enlargement* of the archaeological picture, compositely afforded by the present Report, would be potentially promising. This needs the co-operation of the local gentry and the discerning eye of several young archaeologists towards this consummation. It is hoped the present Report will provide the stimulus and framework for such a continuing quest.

APPENDIX I

List of sites explored in the Kaveri delta

S. No.	*Village*	*Location of the site*	*Nature of finds*
1.	Vanagiri	Tondikudu site, 3 furlongs west of the sea and immediately on the east of Kilayur (S. no. 128)	Habitation site-earth dug upto 30 cm, lot of potsherds of Black and red ware Black ware, Red ware and blue bangles and urn pieces
2.	Vanagiri	Irattaikuthar site (S. no. 140)	Heap of excavated earth from surrounding fields, Red slipped ware, incised red ware, dull red ware, a few Black and Red ware, terracotta knob in red ware and copper coins of Cholas, blue bangle piece
3.	Vanagiri	(S. no. 140 and 149) probably a	Red slipped ware, Black ware, dull red ware, weathered red ware, blue, green and yellow bangle pieces, terracotta ring-well piece
4.	Vanagiri	Pottadipattam site, south of Kaveri 90 cm below surface	Dull red ware (late), bright red slipped ware
5.	Vanagiri	Pirsadi medu, north-east of Vanagiri	Urn pieces, Black ware, dull red ware, incised red ware, Black and red ware
6.	Vanagiri	(S. no. 408) site of excavation of of ring-well diameter 1·20 m	Ring-well pieces, urn pieces, megalithic red ware with two holes, all black ware, copper and iron pieces
7.	Vanagiri	Ellaiamman temple site immediately on its south on the coast	Black and red ware (Mega lithic), red paint on wares, weathered black ware, Red

			ware (Megalithic), urn pieces, iron piece .
8.	Vanagiri	Kallankundu continuous site here and there	Hundreds of beads of tubular coral carnelin, blue green and yellow, black quartz, beaded agate, chalcedony green micro-beads, iron pieces, knives, arrow-heads, copper pieces, six coins, shell bangles, green and yellow bangles, segmented bead of red and green jasper, terracotta heads, megalithic Black and red ware bowls etc., weathered Red ware, big lamp with four lips, terracotta animal, Black ware with concentric rings, coarse red ware
9.	Vanagiri	Kallangundu (North site)	Black and red ware
10.	Vanagiri	Kallangundu west site (S. no. 427-429)	Black and red ware, urn burial site (same as site no. 8)
11.	Vanagiri	Ponnanganni tidal or Mettu Kulam (S. no. 310)	Surface, Excavated place
12.	Kilvanagiri	Kadamaniyam site (from dug out heap)	Burial urns, lamp, polished megalitihic, black ware.
13.	Vanagiri	Silumban - kattalai by the side of Rottukulam (1 furlong west of site no. 11)	Red slipped ware, Black ware
14.	Melayur	Sabapathi Padayachi Punjai kadu on the north side of road	Pottery from section of an already dug pit; three layers identified; terracotta figurines (mediaeval), pottery, bead
15.	Vanagiri	Thosaikulam site and Seradithurai on the west of Rottukulam	Habitation site, partly intact. 3.05 m below section, full of pottery charcoal and ashes, typical megalithic Black and

		red ware, conical based bowl dish of red wares, lid with knob in central hole, red slipped ware, full lamp of terracotta, beads of red, green, yellow, black chalcedony, agate, coral, ring wells removed, copper coins (broken)
15. Kilaperum-pallam	Nadankoil Mandan yadi tidal	Habitation site, red slipped ware of mediaeval period
16. Melaperumpallam	Mandakkarai (owner Kuppuswami Padayachi urn burial site (4 localities)	Black and red ware lid with animal head, small vessels near excavated urn, pottery from excavated urn.
17. Melaperumpallam	Virali, on the way to Mamakkadi red sand (disturbed partly),	Urn pieces megalithic Red ware, Black and red ware
18. Vanagiri	Wochimedu and Puthripattam on southern bank of river	Urn pieces and red slipped ware - dug up earth
19. Melaperumpallam	Mankankankatbai	Urn pieces, dug up earth Black and Red ware
20. Tiruvalambur	West of Isvaran temple	Bangle pieces and few pottery
21. Melaperum pallam	Periathope	Urn pieces, megalithic Black and red ware
22. Melayur	Agraharamedu (between Melayur and Kaveri river)	No Black and red ware with inursion on top, red incised wares (Mediaeval)
23. Sayavanam	Mundirikadu (on the east of Sayavanam temple)	Copper ring (broken), Red slipped ware, iron piece (broken), black and blue bangle pieces, red ware (not megalithic)
24. Melaiyur	Tachamaniyam ground	Mediaeval red slipped ware,

* This material is part of the Survey carried out by Dr. K. V. Raman, then Technical Assistant of the Survey, Southern Circle, which is now included in the Report.

			structure
25.	Manigramam	Karvali tidal (near village) urn burial site	Black and red ware (plenty), bangles, green beads, copper coin (small), copper objects (broken), coral beads, carnelian, banded agate beads, micro-beads
26.	Manigramam	Karvali tidal Habitation site	Habitation section, full of pottery of thick red ware
27.	Manipuram	Perial tidal (north-east of village)	Habitation site, red ware, Black and red ware, beads coral, carnelian, green glass, iron
28.	Melaiyur	Vellayan Iruppu	Thick red ware, mediaeval pottery
29.	Melaiyur	Vellayan Iruppu	Terracotta animal figurine, copper coin, glass bangles
30.	Melaiyur	Uppankulam	Black and red ware, habitation - Red ware, black bangles
31.	Kilayur	Site on the beach (near Kaveri river Sangamam, South of Kannagi statue)	Megalithic Black and red ware, urn pieces, black bangle
32.	Kilayur	Site on beach (near Kuppam)	Yellow and green beads, copper bell, copper wire, black bangles, Vinayaka statue
33.	Kilayur	Site on beach north of Kuppam	Thin fine black ware, Black and red ware, Red ware, glass bangle, coral bead
34.	Kilayur	On the way to Neidavasal, in the interior near Church	Urn burial, Black and red ware, beads, terracotta, ring well
35.	Kilayur	Periamedu or Periathope, east of Mandakkadu	Habitation site, rich thick red ware, iron piece, green glass beads, bangle piece
36.	Kilayur	Between Mangaimedu site and sea shore	Black ware, red ware, Black and red ware, bangles, black

			bead
37.	Kilayur	Mangaimadam	Dug out earth top level earth rather late red ware
38.	Kilayur	Ayyankoilmedu (opposite to Dharmakulam tank side of the road)	Black ware, Black and red ware
39.	Manigramam	Excavated trench	Red ware, Black and red ware
40.	Kilayur	Mandakkadu	Red slipped ware, black bangles

APPENDIX II

C^{14c} dating

C^{14} dating of Kilayur (Mangaimadam site) Wharf, of wood, from trench KLR-I, locus 2, layer 4, depth 1·25 m from the Tata Institute of Fundamental Research. Radio-Carbon unit, Bombay, numbered TF-207.

This wooden post was embedded in the backwaters of the sea where a wharf as a regular boat-jetty-like site, distinguished by a shallow basin-like depression of the layers, from the natural sand and alluvial clay upwards to the top humus of the later cultural periods, had formed. In this, the first stage of wharf was composed of a series of poles driven into the soil below water at low tide, in an alignment of rows and seemingly secured to one another and to the planks probably fixed on top as a platform, for loading and unloading the commodities brought from the sea into the backwaters by boats. This appears to have been elaborated and strengthened, in the subsequent stage, by a regular brick-built wharf of twin platforms, complete with a floor course and space in between the quay-like platforms for breakwaters to run through without eroding the bricks.

As the poles were already there earlier, the bricks were so caused to accommodate the poles by their appropriate points cut in the edge bricks into concavities around the pre-existing poles. The multiple courses of the platforms wee apparently kept at such a height that even at high tide, the tops of the platform as well as the poles will be well above the waste level.

The C^{14} determination yields for the wood which formed the specimen, so examined, an absolute date value of 2265 minus 1966+299 – 100, that is, approximately between 300 B.C. and 200 B.C. say as an average of 250 B.C. The reference to the Black and red wares in the determination was that of the associative ceramic of the cultural period to which the poles belong, which is of PeriodI, when the Black and red ware - using, urn-burial practising communities were living in the locality of the present Kilayur and Vanagiri variously, especially to the south and north of the Kaveri mouth and should have been using the wharf of poles. It may be added that the next period when the brick-built wharf had been provided, the culture of that period is datable by its own data to the period broadly of first century B.C. to first century A.D., inter-locked with the advent of the 'Rouletted ware' using phase and after the pole-built wharf stage. The black and red ware was, however, continuing in the brick wharf phase also.

TF-207 of the March 1966 list of the T.I.F.R. (14^c unit) of the wooden sample from Kilayur.

Black and red ware - 2200-100 (2265-100).

The two dates above B P are based on the two 'half-life' values of the method, respectively 5568- 30 yrs. and 5730-40 yrs. The latter may be deemed as the best working value (Godwin, 1962) - Godwin, H. *Nature*, 1962, 195, 984.

APPENDIX III

Animal Remains

phylym:	Chordata
Class:	Mamalia
Order:	Artiodactyla
Family:	Bovidae

Site	*stratum*	*locus*	*Depth*	*Remarks*
Pallava-nesvaram	Layer (2)	CXY-2 5·28 m	0·99 m	Fragment of 3rd & 4th right metacarpal *Bos Indicus* Linn.
—do—	—do—	CXY-2-4 72 m	0·98 m	Proximal and fragment of Tibia *Bos indicus* Linn.
—do—	—do—	CXY-3 4·0 m	—do—	Distal condylax fragment of femurs *Bos Indicus* Linn.
—do—	—do—	CXY-2 5.10 m CXY -3 4.0 m	1·0 m	Shaft of the left humerus without proximal and distal extre mity *Bos indicus* Linn.
—do—	—do—	CXY - 2 5. 10 m CXY - 3 400 m	1·0 m	Fragment of the shaft of femur *Bos Indicus* Linn.
—do—	—do—	—do—	0·85 m	Fragment of the Ist Phalanx of fore foot *Bos indicus* Linn.
—do—	—do—	—do—		Fragment of the head of femur *Bos indicus* Linn.
—do—	—do—	CXY-2 4·70 m	1.01 m	Fragment of rib *Bos indicus* Linn.
		CXY-3 3·75 m		Fragment of rib *Bos indicus* Linn.

Note: The pit lined with bricks in which most of the above mentioned bone remains had been found, was in layer 2 which represented the closing stages of the main monastic period, and after a partial disuse was followed by the brick temple phase, further south of the earlier monastery, in the late Mahayana phase which should have continued into the early part of the Imperial Chola phase during which time, the gilded Maitreya bronze of great artistic merit, was found here, earlier to the excavations, datable to, about the late eighth century and now belonging to the Government Museum collections, Madras (from where it had been recently reported as 'missing'.)

The use of the cattle bones in a lined pit might either indicate that the pit was used as a dumping bin after the meat had been consumed by the monastic community or by the people residing here in the temporary phase of disuse of monastic activity. They do not appear to be suggesting sacrificial or other ritual use which was alien to Buddhism.

APPENDIX IV

Sites yielding Rouletted ware in Tamil Nadu and Pondicherry*

1.	Mahabalipuram	District Chingleput
2.	Vasavasamudram	District Chingleput
3.	Punjeri	District Chingleput
4.	Kanchipuram	District Anna
5.	Sengamedu	District South Arcot
6.	Arikamedu	Pondicherry
7.	Mel Sathamangalam	Pondicherry
8.	Nagapattinam	District Thanjavur
9.	Karaikadu	District South Arcot
10.	Kudikadu (Nathamedu)	District South Arcot
11.	Kaveripattinam	District Thanjavur
12.	Korkai	District Tirunelveli
13.	Tondi	District Ramanathapuram
14.	Alankulam	District Ramanathapuram
15.	Kayal	District Tirunelveli
16.	Karur	District Tiruchirapalli

*Even at Ayodhya (U.P.) on the Sarayu, an affluent of the Ganga, 'Rouletted'ware has been discovered in the first-second century A.D. levels of the excavations there (cf. Indian Institute of Advanced Study, Simla, *News letter*, No, 7 and 8, p. 27 and pl. on p.26 (Jan-Dec.1977).

APPENDIX V

Other Scientific probe attempts

Archaeological Explorations with Proton magnetometer was conducted under the auspices of the Institute de Physique do Globe, Paris and French Institute of Pondicherry at Kaveripattinam, in 1966. Dr. Yves Martin who carried it out took readings with the help of proton Magnetometer. The places indicated as likely to yield structures (or pottery dumps which also give such indication) were in the Pallavanesvaram brahmanical temple site, which was thereafter taken up by the Survey for some trial digging. The probe yielded some miscellaneous mediaeval ruined brick-bat clusters, but of no archaeological value.

Similar Proton magnetometric survey was also carried out briefly by the National Geophysical Laboratory, Hyderabad (Dr. Harinarayan), along with participtionof Dr. Paramasivan, Archaeological Chemist (Retd.), on the beach of Kaveripattinam, and the tentative results were not of any significant evedentiary value. No further follow-up in a detailed mapping was pursued.

No underwater maritime archaeological investigations have also been taken up so far, though Tamil University, Thanjavur was planning to undertake such a programme. Recently, however, National Institute of Geography, selected the zone for off-shore explorations to be carried out by it, in collaboration with the Government of Tamil Nadu in 1982 (Subbarayan and Vora 1987). The scope of the Survey was limited to identification of the location of submerged structures if any, and ship-wrecks, for further detailed examination. Complex equipment like Atlas-Deso 10 echosounder for the bathymetry, EG & G side sea, Sonar for detecting any object exposed on the sea-bed, and a Barringer Oceanographic Magnetometer for detecting magnetic anomalies associable with the magnetic objects of the ship-wrecks. A motorole Miniranger MRS-III was also used for the position fixing system apart from a UMEL underwater stereo camera and a La fond snapper for sediment collection. These were taken to the site, but owing to adverse weather condition, the surveys were abruptly terminated, and these could not be deployed.

The Survey was on a scale 1:25.000 with 250 m line spacing for adequate overlap. Due to wind and currents, there was deviation in some case in the lines to be surveyed and planned at a spacing of 250 m. Between Kaveripattinam and Vanagiri, 23 E.N. and S.W-S.E. and 3 N-S line; and between Kaveripattinam and Tranquebar, 2 N-S lines were grid-surveyed. The echosounder and sidescan Sonar were continuously operated and the magnetometer, most of the time [(Courtesy : Progress and Prospects of Marine Archaeology in India - S. R. Rao (First Conference on Marine Archaeology of Indian ocean countries, N.I.O. Dona Panla, Goa - 403 004, 1987, pp.59-62)].

APPENDIX VI

Selected Brick measurements from Kaveripattinam and other comparable early historic sites in India (first century B.C. to fourth century A.D.

1.	Kaveripattinum (Tamil Nadu)	
	(a) Kilayur (Wharf)	61×40·5×7·7 cm
	(b) Vanagiri (Inlet sluice)	40×26×10 cm
	(c) Pallavanesvaram (Vihara)	42×24×10 cm
2.	Kanchipuram (Tamil Nadu)	28×19×16 cm
		56×23×8cm
		40×18×6 cm
	Korkai (Tamil Nadu)	45×23×7·5 cm
3.	Nagarjunakonda (Andhra Pradesh	56×28×7·5 cm
		48×27×9 cm
4.	Chezerla (Andhra Pradesh)	45×24×7·5 cm
5.	Virapuram (Andhra Pradesh)	54×27×9 cm
		49×24×8 cm
6.	Gummanakonda (Andhra Pradesh)	41×20·5×9·0 cm
7.	Rangpur (Andhra Pradesh)	38×20×8 cm
8.	Kudaveli Sangamesvara (Andhra Pradesh)	44×20×24 cm
9.	Siddhesvaram (Andhra Pradesh)	37×18×7 cm
10.	Nevasa (Maharashtra)	48×27×9 cm
		58·5×25×7·5 cm
11.	Eran (Madhya Pradesh)	43x25x7·5 cm
12.	Devnimori (Gujarat)	40×25×7.5 cm
13.	Broach (Gujarat)	40×27·5×7·5 cm
		32·5×20×6·5 cm
14.	Vaisali (Bihar)	37·5×22.5×5 cm
15.	Patna (Pataliputra) (Bihar)	42·5×27·5×4·3 cm

APPENDIX VII

Conjectural elevation of the Buddhist temple, Pallavanesvaram (figs. 8-9)

The Buddhist temple plinth shows a distribution of provision for three pairs of flight of stairs on its three sides, except the eastern where no staircases were provided.

The surface feature around the stairwell suggests a basal clustering of bricks strengthening the stair-case wells, with atleast 2-3 brick width (each brick of 7·5 cm width), indicating that the thickness of the walls around the void-well in each case was about 15 to 25cm. The stair treads were of about 50 cm width and the risers were perhaps of about 37 cm to 45 cm. This is on the basis that the height of a floor might have been 2·74 m (as is usual) or less if so desired and taking note of the fact that six treads (or risers, if not seven) could have existed. Though such usages are not in tune with modern constructions (which have a risers of not more than 9"), in the early to mediaeval times, it was quite universal to have such 37 cm to 45 cm risers whether in a residence or a temple or even a fort or palace. Since there could not be more than six treads and as many as seven risers, for one to reach the first floor from the ground floor and since the staircase itself was about 45 cm to 53 cm wide, it could accommodate only one person at a time. This explains why three such pairs had been provided, allowing a minimum of six persons at a time to climb the stairs simultaneously, followed no doubt by a few more in a row (or queue) in each staircase. Granted that the Buddhist establishment had about 25 persons permanently resident, in rows of three or four all the twenty five can reach the upper floor, more or less at the same time. During important occasions when visitors and devotees could be larger, it might take perhaps some more time, but within manageable limits. It must be understood that the Buddhist establishment was not an open public premises, but with a compound wall and controlled access; and discipline is generally greater under Buddhism than in a brahmnical temple.

Hence, both the width of the stair well and the height of the risers, it should be presumed, fell in tune with such provisions everywhere in ancient India (and in villages and even Havelis of North India today, this is most common).

We do not know if the upper floor also continued the stairwell provision on to the next higher floor, or not, but we are presuming that it was restricted to only two floors.

As far as ground floor was concerned, the astylar corbelled coffer which enclosed the central tank like void would have *two* purposes, firstly to provide foundations for an upper level wall around the shrine of the same width, which would be of the order of about 16·76 cm to 17·78 cm. It is seen also that, excluding the stairwell wall thickness itself, the space available between the central tank-void and the smaller array of peripheral voids were themselves equal almost to the width of the smaller voids themselves which was 1·75 to 2 m. Hence, the chances were that this whole space was covered by the astylar corbelled wall. It so, the chances were equally that within the periphery of the stair well rows, there was only this wall; and the space on the plinth, outside the stair well, would alone have served as a *vithi* or ambulatory path and were of the order of little more than a metre wide. This

feature again goes well with the general usages noticed in Indian monuments right through (as for instance, in the Sun temple at Konarak) with the *vithi* on the outer edge of the plinth.

The upper floor was perhaps of *lesser* height and, since there could not have been a second floor, the remaining part, namely, the *sikhara* or superstructure, would be rising either equal to or less than the height of the first floor which latter would have been not less than about 200 cm.

Now, as regards the superstructure, on the basis of general picture seen in early historic times, of Tamilnadu ('Sangam period' onwards), on the one hand, and in early upper Indian Gupta traditions on the other, either a *kutagara* type or a *bhumi prasada* type of *sikhara* would have been reasonable. In the former, its interior ceiling would have been 'coffered'. In the latter, its exterior would have a stepped pattern of a rudimentary *bhumi-prasada* type which, from the fifth-sixth century A. D. onwards, becomes an indigenous partner to the hieratic forms like *vimana* or *rekha prasada*.

Since in the upper floor there would be need for people to collect for worship, there was a ceiling also around the shrine. We do not know if it was slopy but chances were that it was not in Tamil nadu where a *vimana* entablature was more common. Also, in the case of the *kutagara* model, perhaps, there was only a *vedi* parapet with or without a *torana* entry on cardinal points and not ceiling or roofed ambulatory.

Thus, one of these two models and the ancillary features suggested above might have been possible if not probable. In any event, the finished structure, would have been quite impressive in its own way, and would have the necessary facilities, as well as exclusive privacy that would have been required.

APPENDIX VIII

Note on the 'Rouletted ware'

The occurrence of the Rouletted ware in the classic context *'in relation with the Roman Arretine' (Terra Sigillata)*- Italics author's - in texture and shape, in the first century AD at Arikamedu, in Wheeler's excavation of 1945, has an intrinsic and universal improtanee in South India which cannnot be underplayed. Its strength lies in the association of an undoubtedly imported, Roman ware with another where the *technique* of 'roulette prickings', at least, was equally undoubtedly of 'foreign' origin, in a manner where the outer limit is clearly closing with the stoppage of manufacture of the Roman Arretine in the parent country, Italy, and the site (Arezzo) of manufacture.

Any consideration of the *range* of time-use-relationship of the 'rouletted' technique is to be separated from the above cited 'datum' *relationship with the Arretine.* In the site of Arikamedu itself, two agencies, Wheeler, on behalf of Survey and Casal, on behalf of the French Institute of Pondicherry, had excavated, the latter also after Wheeler. It has been interestingly suggested recently (Vimala Begley, 1988) that the latter excavation revealed the pre-existing career of the 'roulette' pattern, in the earliest phase of Arikamedu, in association with the 'Black and red ware' and in association with an inscribed Tamil-Brahmi label script, and with certain structures like ring wells of brick, and these three had been cited as leading to the hypothesis that (a) 'Rouletted' ware - whatever this omnibus term may connote to archaeologists - was earlier than the Arretine at Arikamedu and was indigenous in its fabric, (b) that Mauryan impacts had resulted in the ring well, script and possibly religious involvements at Arikamedu, (c) that Arikamedu earliest phase should, *ipsofacto*, on the basis of the Black and red ware showing, be taken back to third-second century B.C. and 'Rouletted' ware also coevally so.

The excavations of Wheeler, though they were not exhaustively in all the zones or sectors of the site of Arikamedu fully, have a clarity in their stratigraphical record and pottery documentation (including the amphorae) which had not been excelled by any other agency. Wheeler's subsequent excavation at Brahmagiri, further characteristically confirmed the role of the 'rouletted *dish* of fine shiny black ware (implicating the associative dating through the Roman Arretine) and indeed in all the excavated sites where 'Rouletted' ware in its characteristic fabric and dish form, had been found, it was belonging to the same chronological horizon which was ascribed to it at Arikamedu see also Appendix IV. In almost all the sites, the 'Rouletted' ware was belonging to the first century A.D. levels. Even at Arikamedu, it was not gainsaid that the 'rouletted' pottery occurred from a slightly earlier stage than the advent *at this site* of the Roman Arretine. The exercise was to fix the date of first arrival of the Roman Arretine at Arikamedu including its inevitable *terminal* date as well and further, in association with other imported elements like Amphorae of the typical datable character.

The Black and red ware in South India, on the other hand, primarily for purposes of close archaeological scrutiny in excavations on stratified basis, resolves itself into two categories, those

which are directly associated with *burials* of one kind or another, and those which are in habitations. Despite the fact that a few shapes have a commonality between these two categories, the general shapes differ widely, not merely in texture, but also in the slip. The Megalithic Black and red ware is invariably of crackled surface, perhaps a result of salt-glazing and kiln temperature. There is thus, a specific character for the Megalithic ware, as compared with those of regular habitations in various periods. Further, the inscribed labels found on them were a *vogue* seen in South India in the periods between pre-Christian to early historic times, and are found both in Buddhistic and non-Buddhistic secular sites equally. But their palaeography has not only been a tricky matter but, nonetheless, had also been studied closely by several scholars (Mahadevan, Krishnan etc.), and chronologically set in their various stages, on the basis of their grammatical form, which again differed from the use seen in the collateral and seemingly parental 'Brahmi' of North India. The kind of letters seen in the solitary example recorded by Casal as in the pre-Christian and earliest level of stratigraphy, is of the type which is past the early characteristically 'southern' branch of this Brahmi, called 'Dravida' by Chakravarti, (obviously was meaning, in its native term, Damili-Tamil), and may be ascribable to the early century A.D. and has many other parallels in the sherds, seen by Wheeler at Arikamedu itself. Subrahmanyam's context at Salihundam of inscribed 'Rouletted' ware, would also not *prima facie* be evidence enough for a pre-Christian date there. The Stratigraphy at Arikamedu that Wheeler had published, right down to the natural soil (the lower several meters of which were *below water level)* can be safely considered broadly also as standing for every sector of Arikamedu and thus, by itself, Casal's trench and his presumed earliest phase may not be much earlier to any layer down to the natural sand that Wheeler excavated and recorded.

The occurrence of a few sherds of 'rouletted' ware even in the later B. Cs. should perhaps be in order at Arikamedu and could at best show this technique of 'rouletting' reaching India, apparently through the Roman or Greek agency, variously and similarly the arrival of the Arretine in the opening decades of the Christian era there, should also be just a temporal difference, and may not make 'Rouletted' ware, as a whole, relatable to the two pre-Christian centuries and in all the coastal sites of Tamilnadu.

Taking the case of Kaveripattinam (which has been quoted by Vimala Begley in her argument basing upon the purely preliminary *I.A.R.* reports), it is seen, as *now* recorded in the detailed and carefully documented findings of the several localities of this port-city, that 'rouletted ware' squarely belongs to the opening century of the Christian era only, in such localities where it is seen at all, which are Kilayur, Vanagiri and Manigramam only; and further the Arretine itself is conspicuous by its absence here and not a single example of inscribed Black and red ware is also noticed in the excavations here.

On the other hand, the 'roulette' technique gets imitated not only in the secondary fabrics like Black and red ware and even red wares, quite apart from the typical two-stage, 'Rouletted ware' range proper— one of shiny black slip and characteristic internally wedged or knife edge rim in a flat dish and the other in other fabric. This flat type itself, is common only between the corresponding Arretine

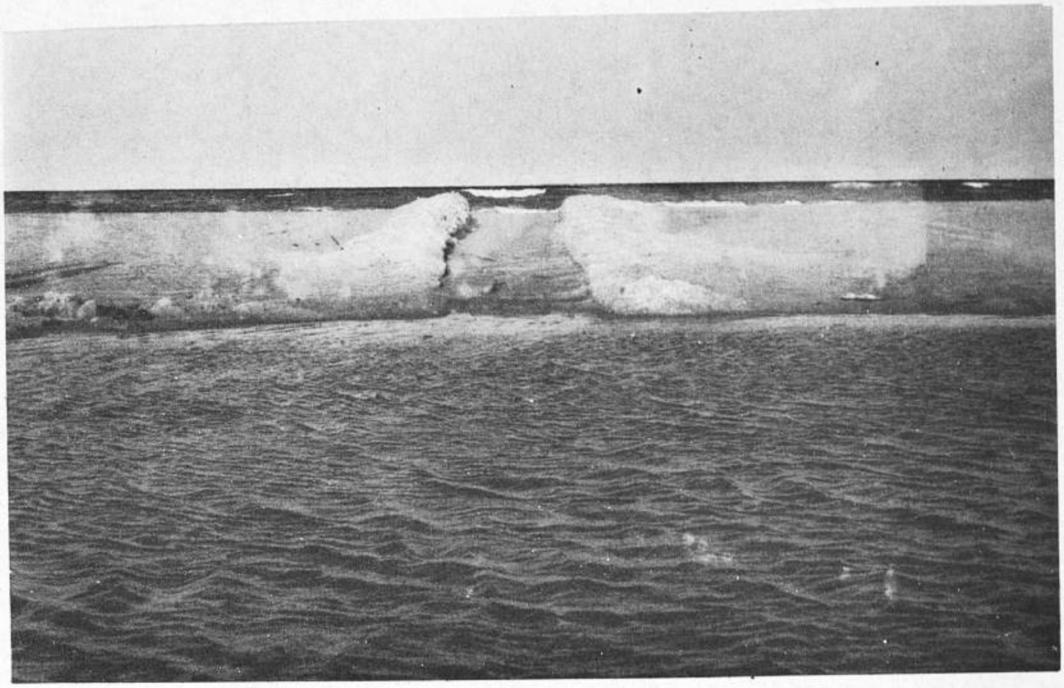
ware in rim form and shape, and shape is not found in any coeval site in *other* contexts in coastal Tamil Nadu. The 'rouletted ware', nontheless, occurs in a prevailing reddish slip also and of rather slightly thicker section in several coastal sites and may have to be distinguished stratigraphically from the classic shiny black slipped fine levigated greyish clay core fabric which is its *archetype*. The reddish variety has to be examined in future or current excavations like Alagankulam where there is a chance of studying it closely. Amphorae, again, are absent at Kaveripattinam so far, and it is to be seen that even Roman coins (particularly gold issues) are *not* to be seen at all, except for the highly eroded solitary example of copper picked from surface at Vellayan Iruppu locality of Kaveripattinam. These may be due to the stages and nuances of trade links between the Mediterranean and the east Indian coastal sites.

There is a reference by Vimala Begley to Soutoukeni and Mutrapalayam pottery from the urn burials and cyst burial there, excavated by Casal, in relation to the Arikamedu Black and red ware, to suggest a pre-Christian date for these burial sites, as opined by Casal. But the latter site had given several flat-bottomed types of vessels of Black and red ware and Red ware, the like of which is not at all seen in the Megalithic pottery of the pre-Christian stages, where excavated. Soutoukeni, besides by its degenerate cist and kennel) whole of a port-hole a sarcophagus intrusion inside it and its other normal pottery, seems to belong to the later stages of Megalithic culture, probably in the early A.D s. They are not, thus, comparable directly with Arikamedu, which is not a burial only unless shape- to-shape comparison of the pots in the different strata are to be made. Ring wells in terracotta, again occur in South Indian sites like Sengamedu, Korkai, Kaveripattinam etc., only in the early A.D., and we have no instance of a truely pre-Christian ring well type, in any of the sites.

The position at Kaveripattinam therefore, of the 'Rouletted ware', *vis-à-vis*, Black and red ware, is that the latter well predates the former into the B.C. It has *no* inscribed category, *no* associated Arretine, no Amphorae, but many stages of imitation of the 'Roulette' pricking *technique* which seems to continue till about the third century A.D. even perhaps. A study of the whole process of trade relationship between Rome and India commercially may, in the ultimate analysis, be very relevant and would be possibly showing *two* stages of arrival and diffusion, one *prior to* the discovery of the monsoon wind in the A.Ds. and going well into the B.Cs. in the sites *south* of Palk Straits; and those *from and after the* trade wind discovery of Hippalus in the first century A. D. onwards and thus the pattern of study will have to be of this dual arrival and the commercial relationship, as of 'Treaty port' and 'emporia type as Wheeler thought, Kaveripattinam being of the latter type, and such a type was not attracting Roman bullion issues while a Treaty port could have been full of close impact, with domiciled foreigners and importation of the exotic techniques like 'Rouletting' and rich bullion transaction (as now seen in hoards in western Tamil Nadu).

Begley, Vimala, 'Arikamedu reconsidered' *American Journal of Archaeology*, 87.4 (1983) : 461-481

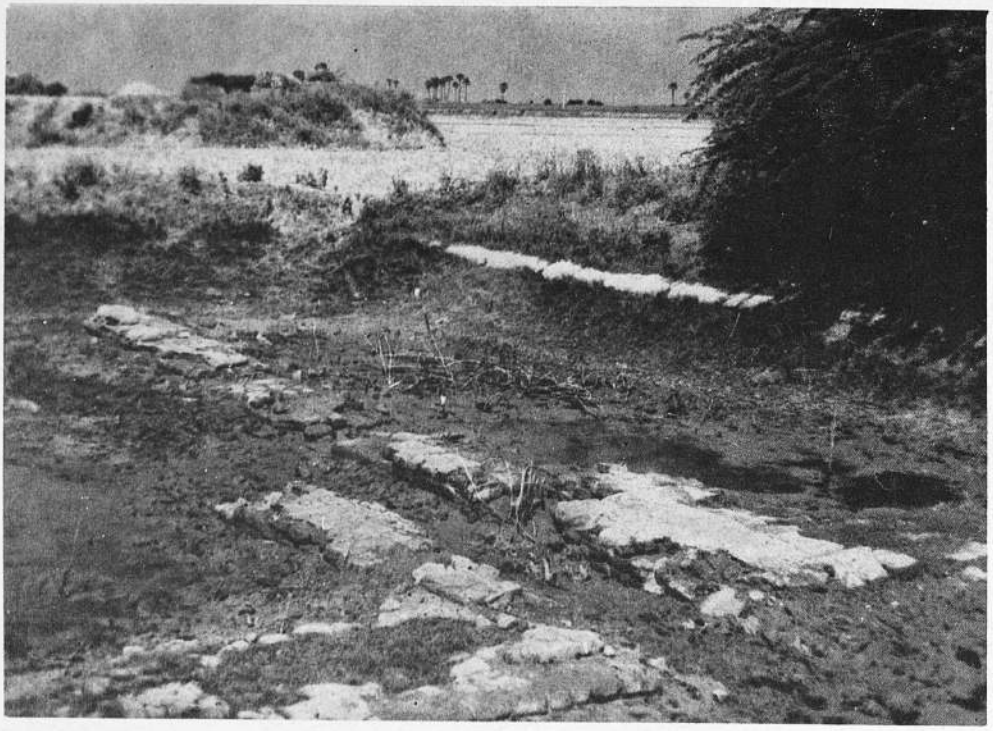
—'Rouletted ware at Arikamedu : A New approach' *American Journal of Archaeology*, 92 (1988) : 427-440



A

B

A, Kaveripattinam : close view of the Kaveri estuary; B, Melaperumpallam : urn-burial mound



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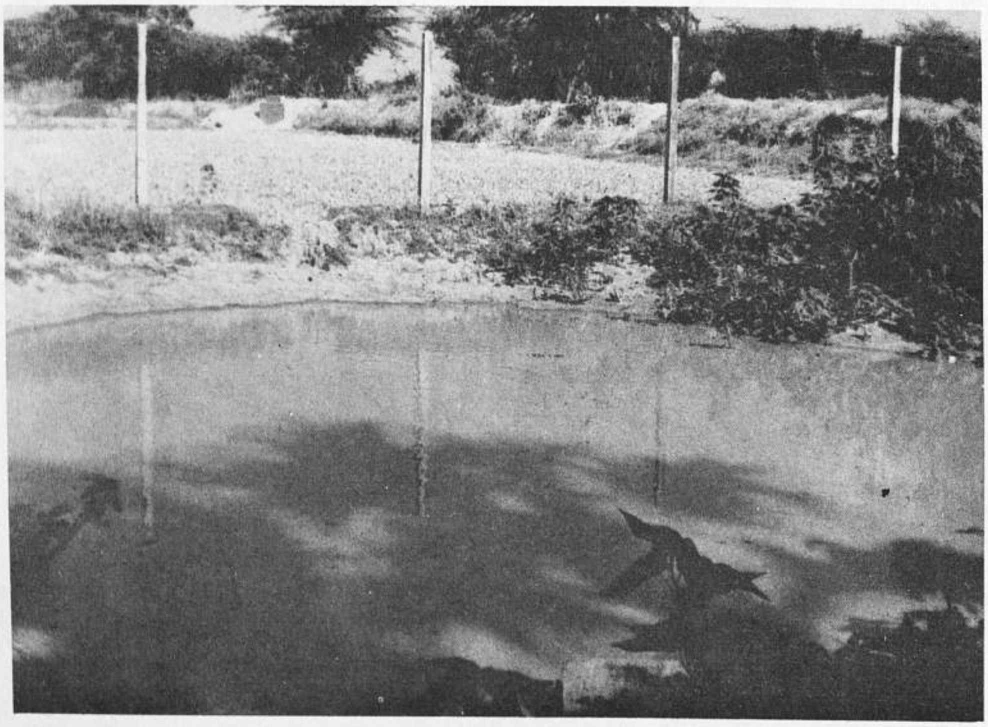
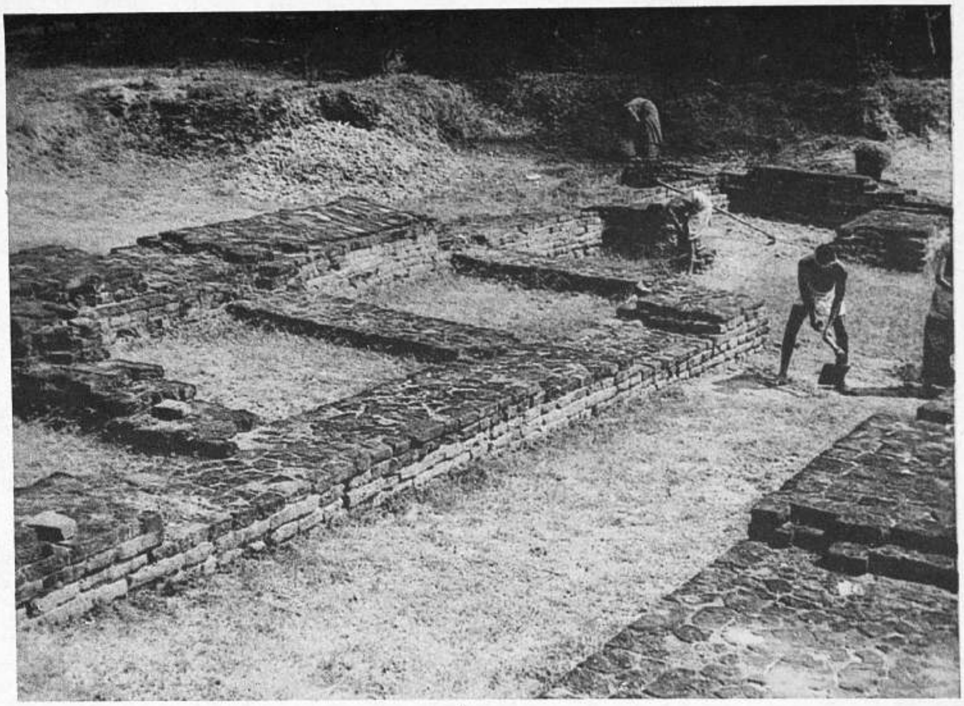


B

A, Mangaimandam (Kilayur): view of the wharf, excavated area; B, Vanagiri : view of the area where the inlet channel of a reservoir excavated



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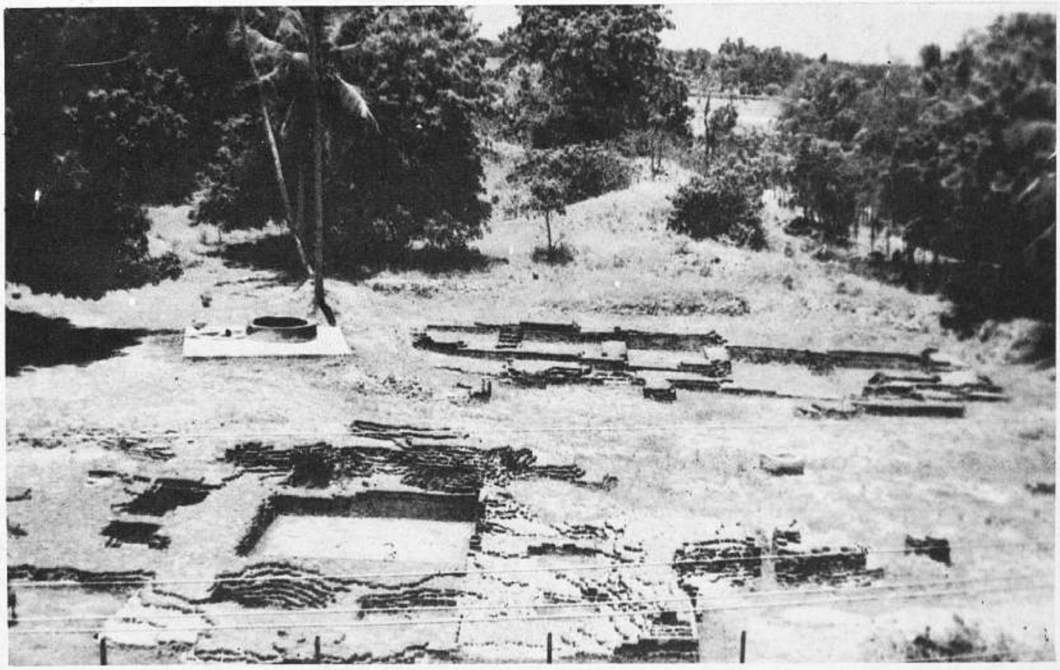
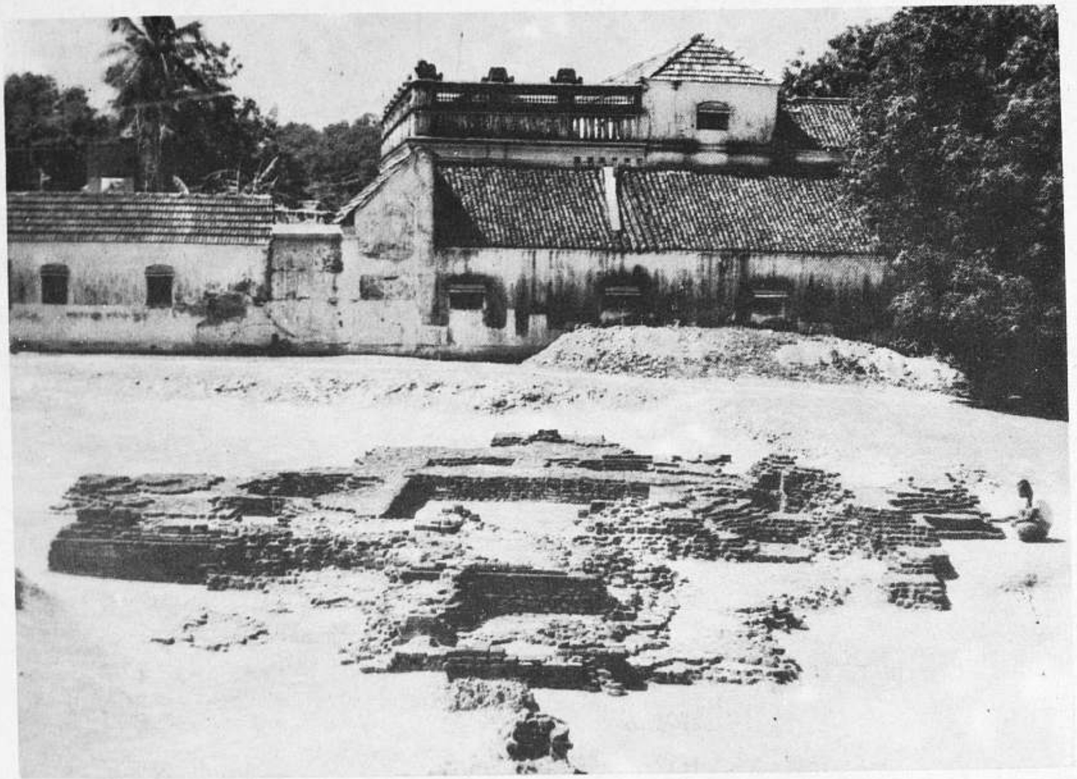


B

Pallavanesvaram : exposed structures, Buddhist Vihara Complex



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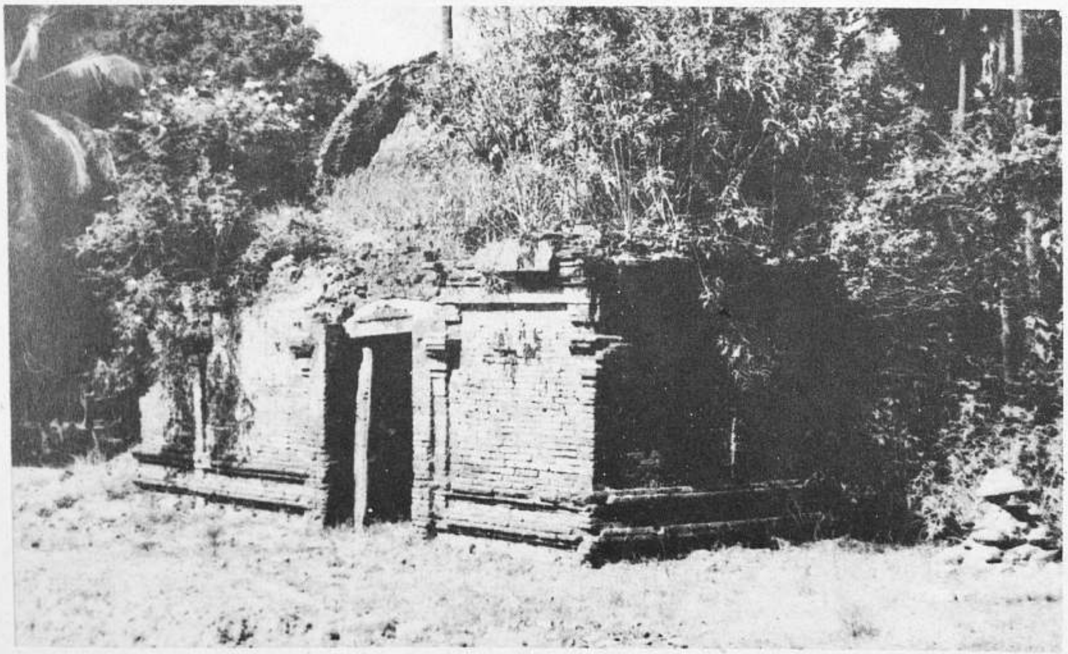
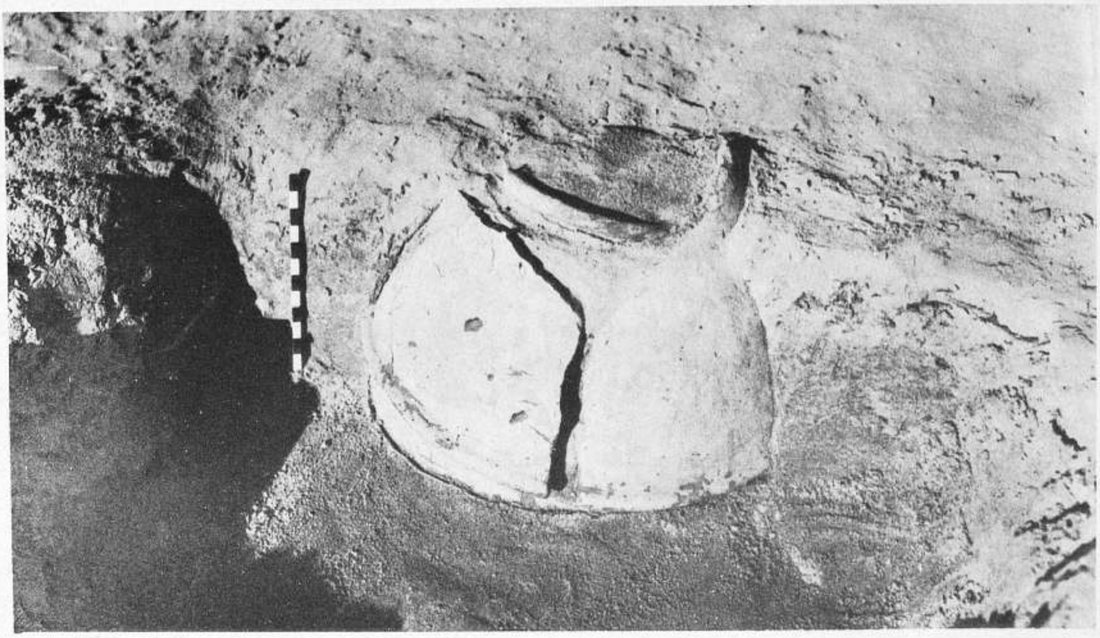


B

A, Buddhist temple at Pallavanesvaram; B, Sambapati Amman temple



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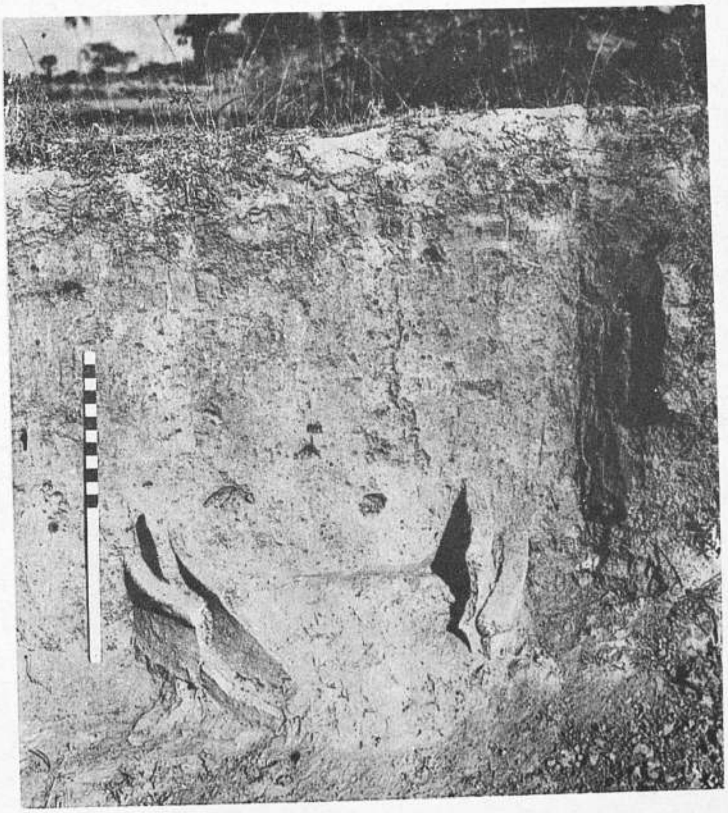
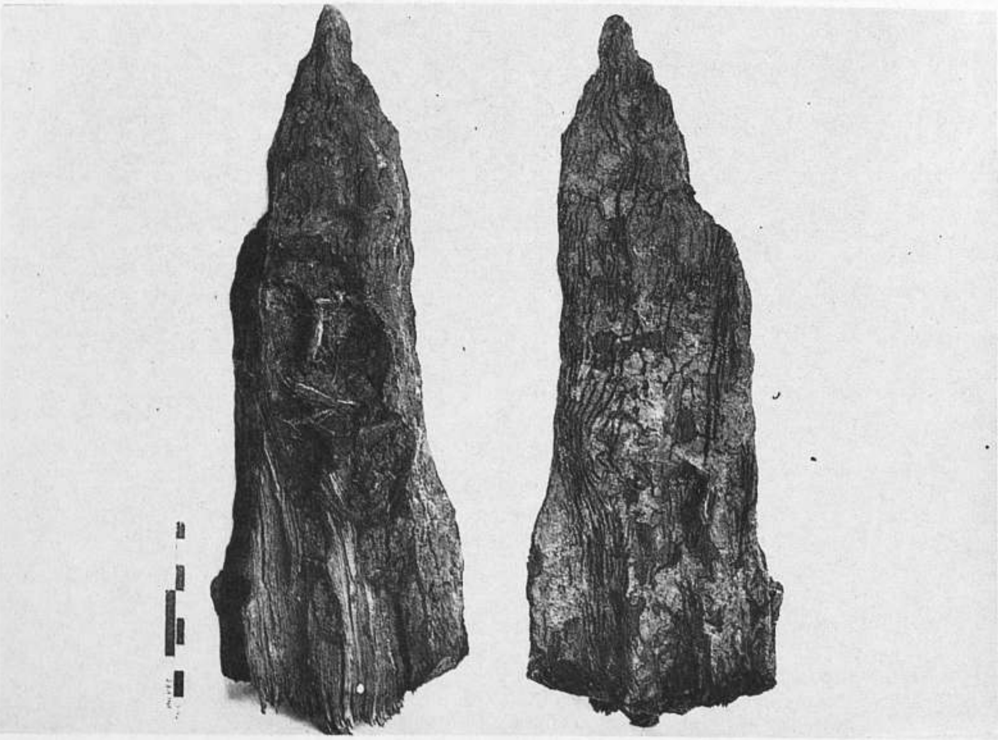


B

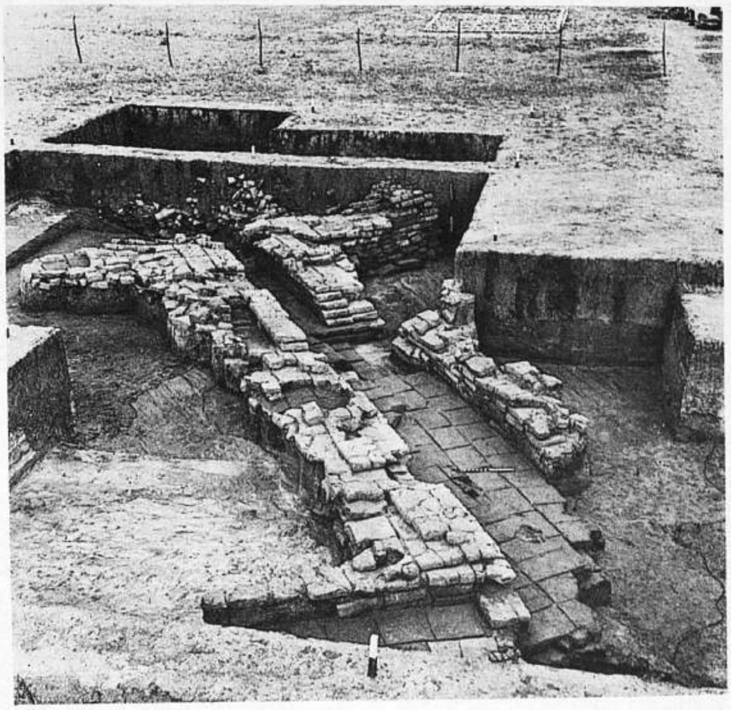
A, Melaperumpallam: exposed urn burial and B, Manigramam : exposed ring well

A



B

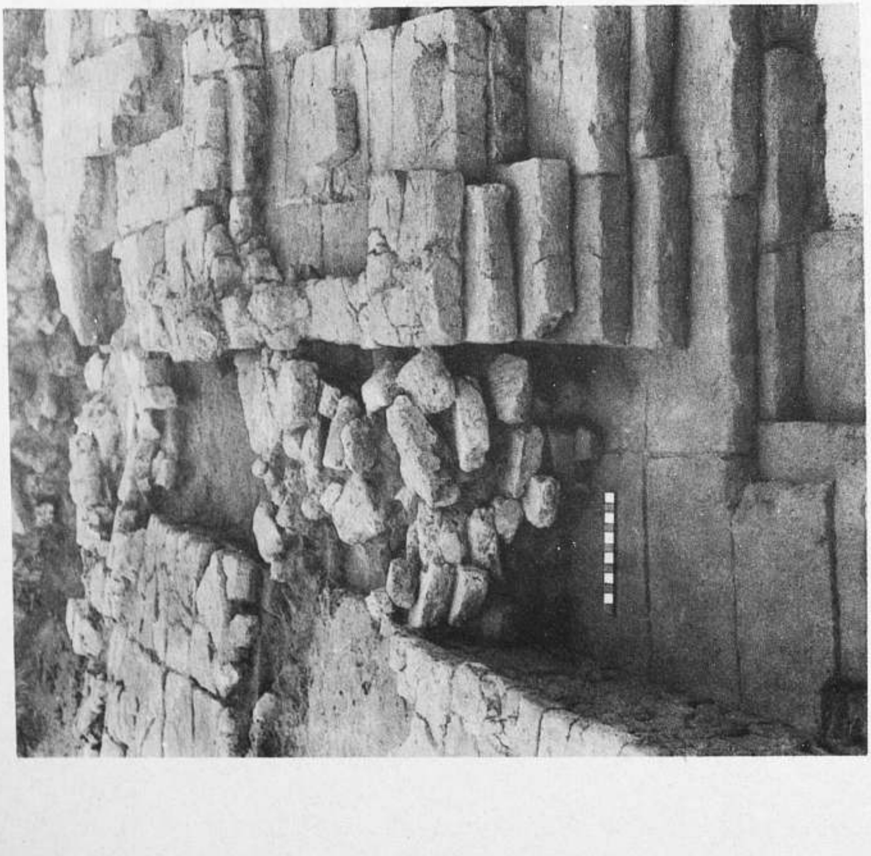
Kilayur: A, close view of the fallen pole in the wharf and B, pieces of wharf pole (sample for C^{14} dating)



A

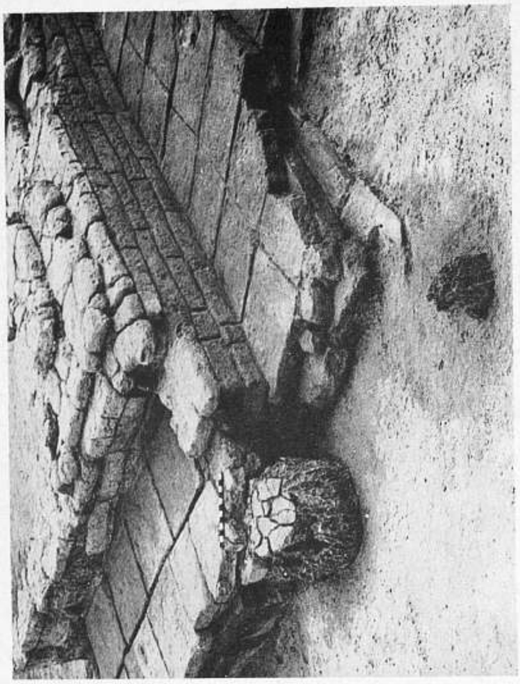
B

Kilayur : A, excavated wharf structure, before removal of the baulk; B, wharf structure of bricks, second phase



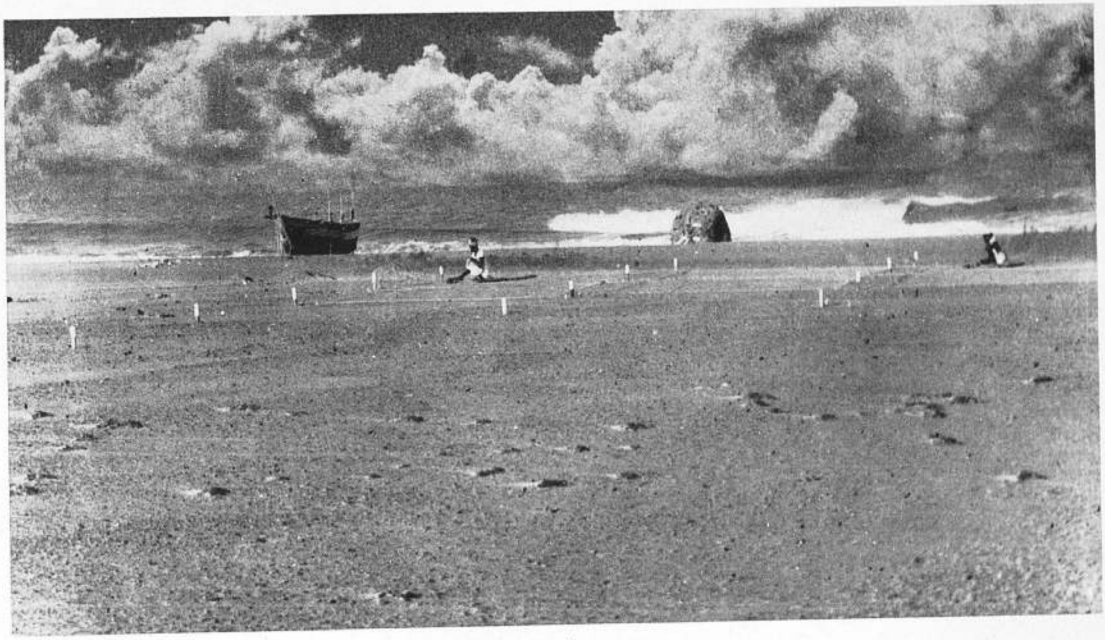
A

B



C

Kilayur : A, central channel, view from east; B, post-holes with wooden posts in the centre of the channel; and C, wooden posts near the brick jetty

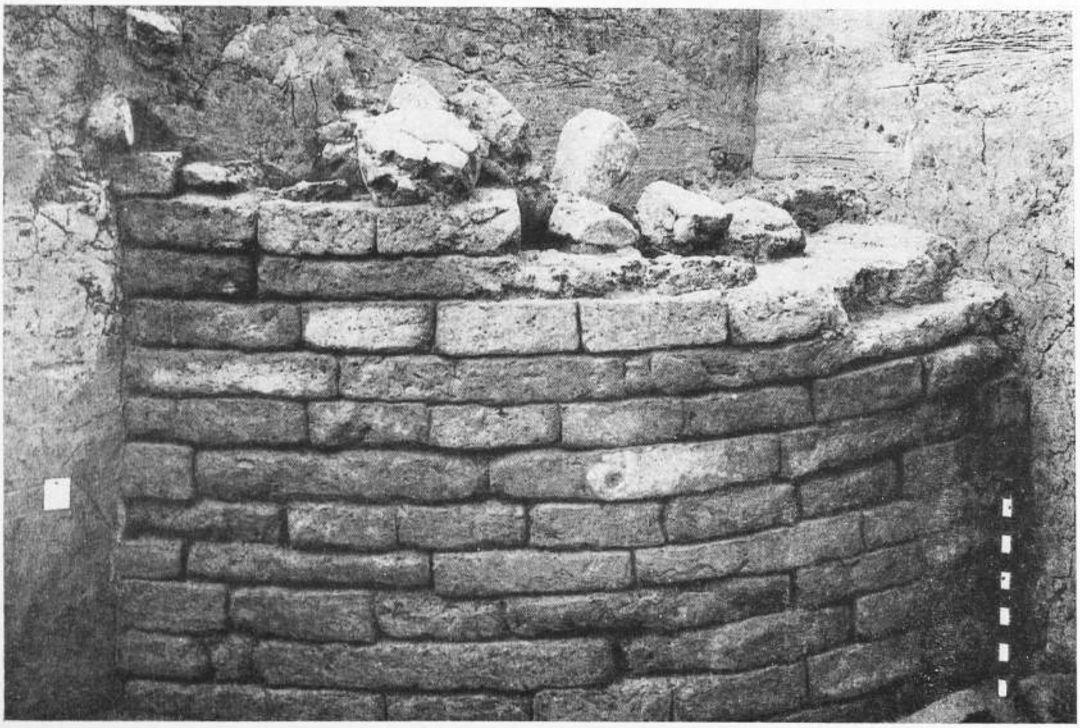


A

B

Vanagiri: A, panoramic view of the coastal site (before excavation); B, inlet channel of a reservior

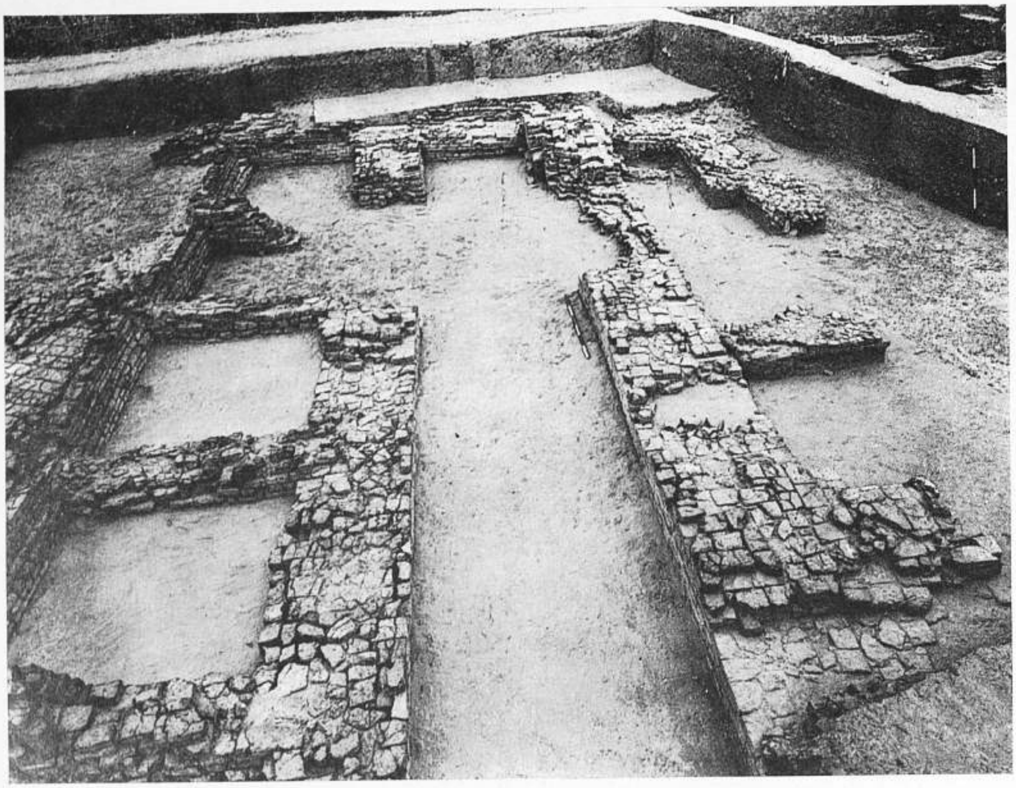
A



B

Vanagiri: A, inlet channel mouth with curved flanks and drip-step floor to check erosion; B, portion of structure during excavation

Pallavanesvaram: a wing of the Buddhist Vihara complex



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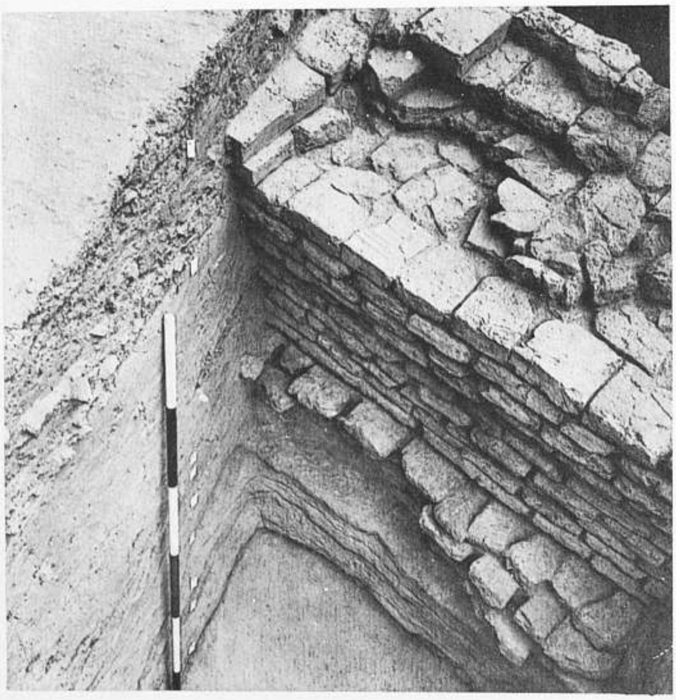
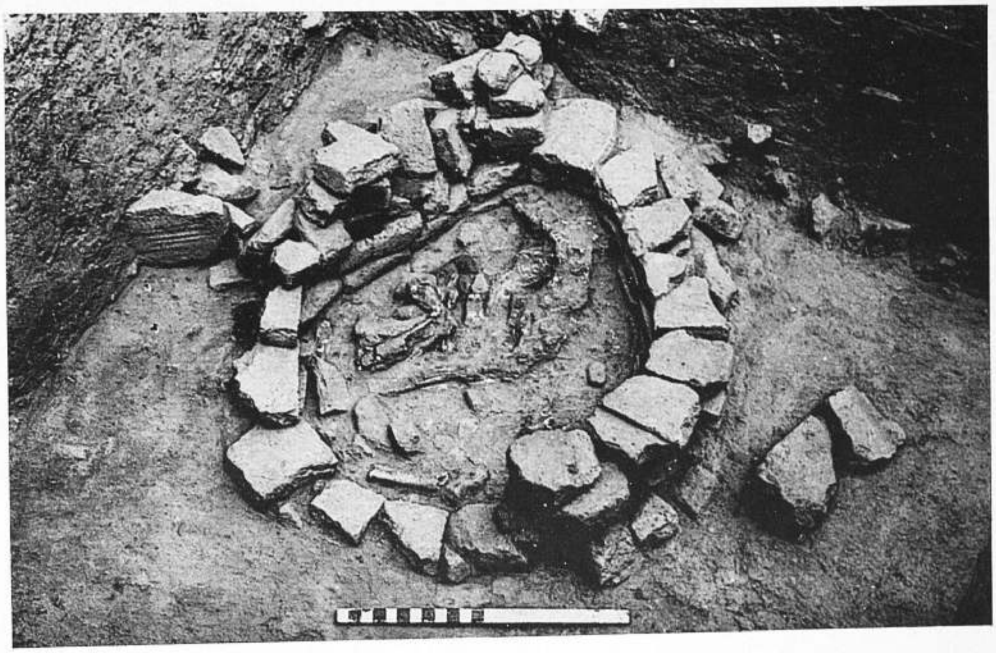


B

Pallavaṇesvaram: exposed structures, Buddhist Vihara complex



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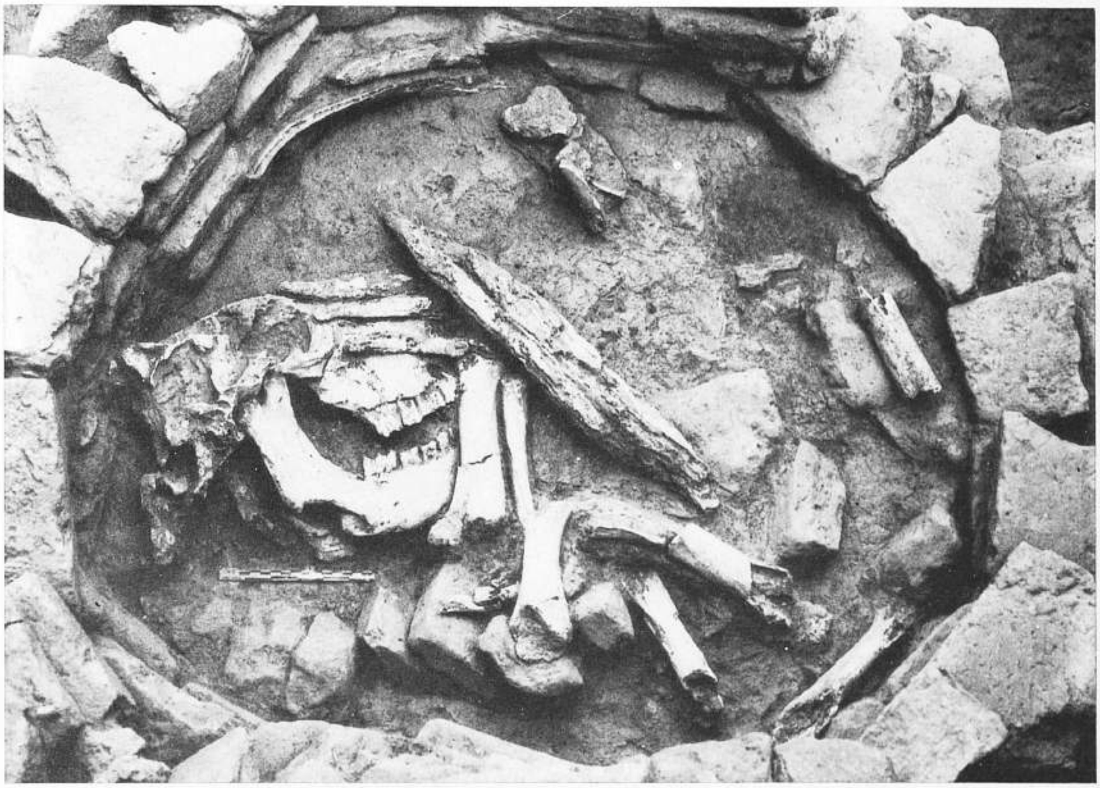
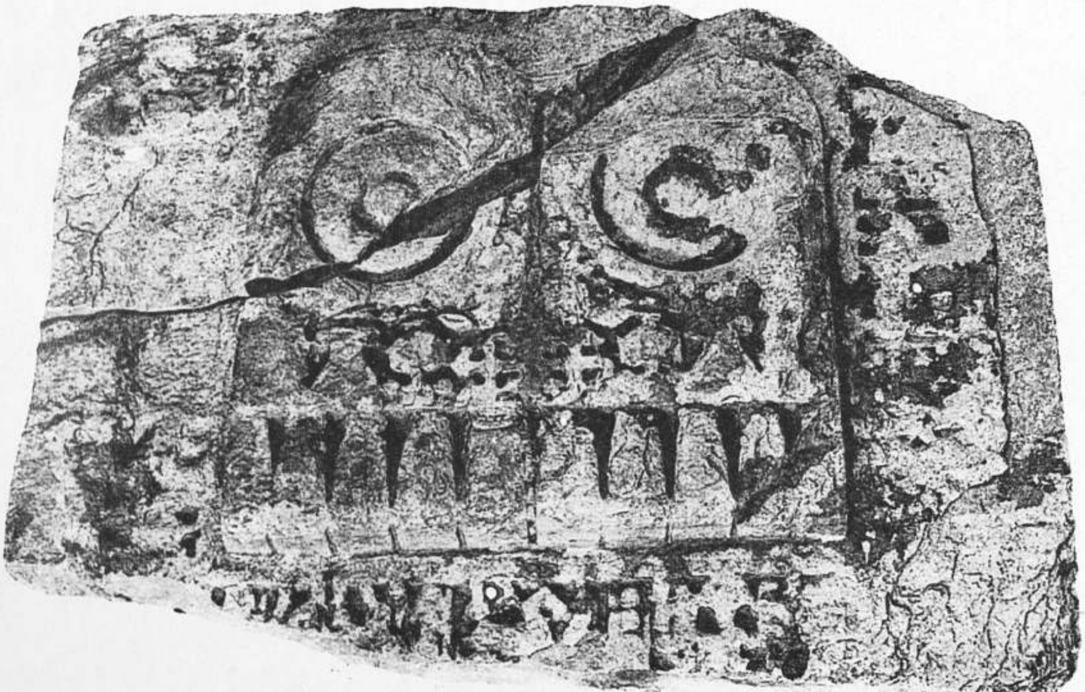


B

Pallavanesvaram: A, circular structure with bones inside near the Vihara, view from north and B, close view of the circular structure

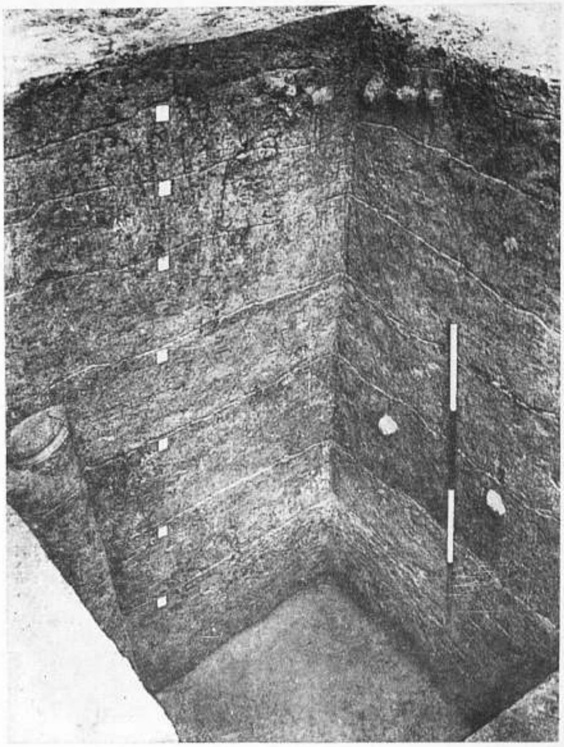
A

B



Pallavanesvaram : A, view of the Buddhapada in one of the cella of the Buddhist Vihara and B, Buddhapada

A



C

B

Pallavanesvaram: A, bronze image of Dhyani-Buddha (after chemical treatment); B, structures of the Buddhist temple ; C, Melaiyur- Vellaiyan Iruppu II: section of the trench looking east and south

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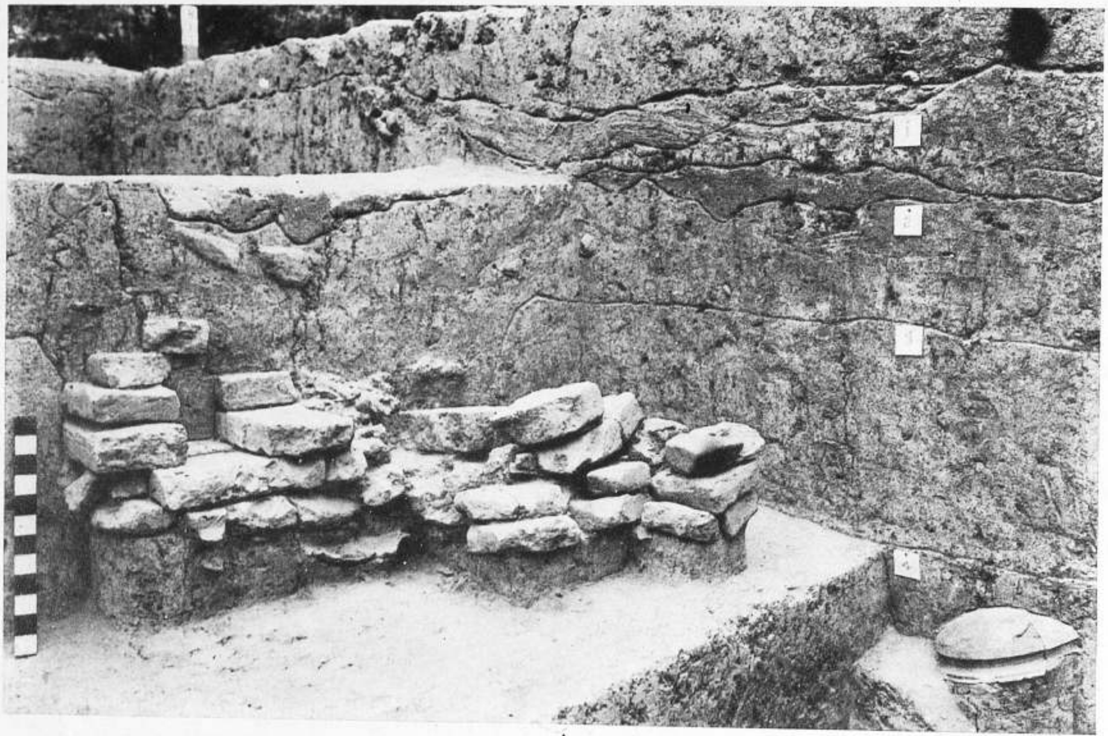
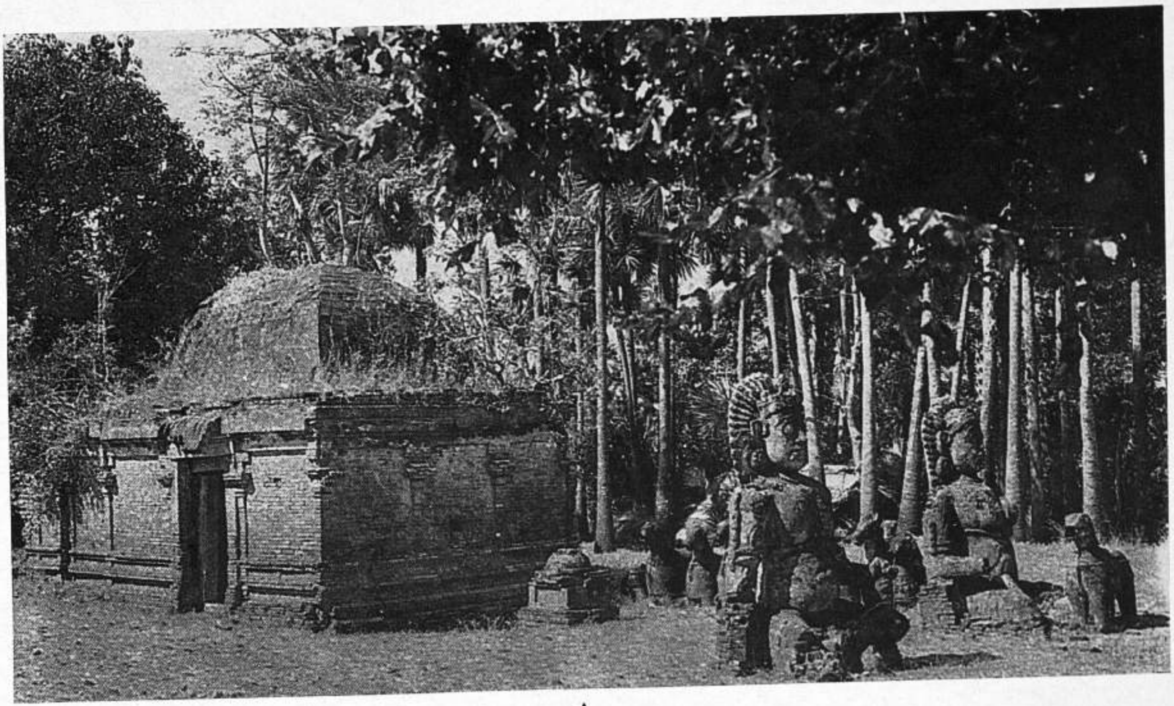


A

B

Melaiyur- Vellaiyan Iruppu II: A, fragmentary wall; B, exposed pit with potsherds



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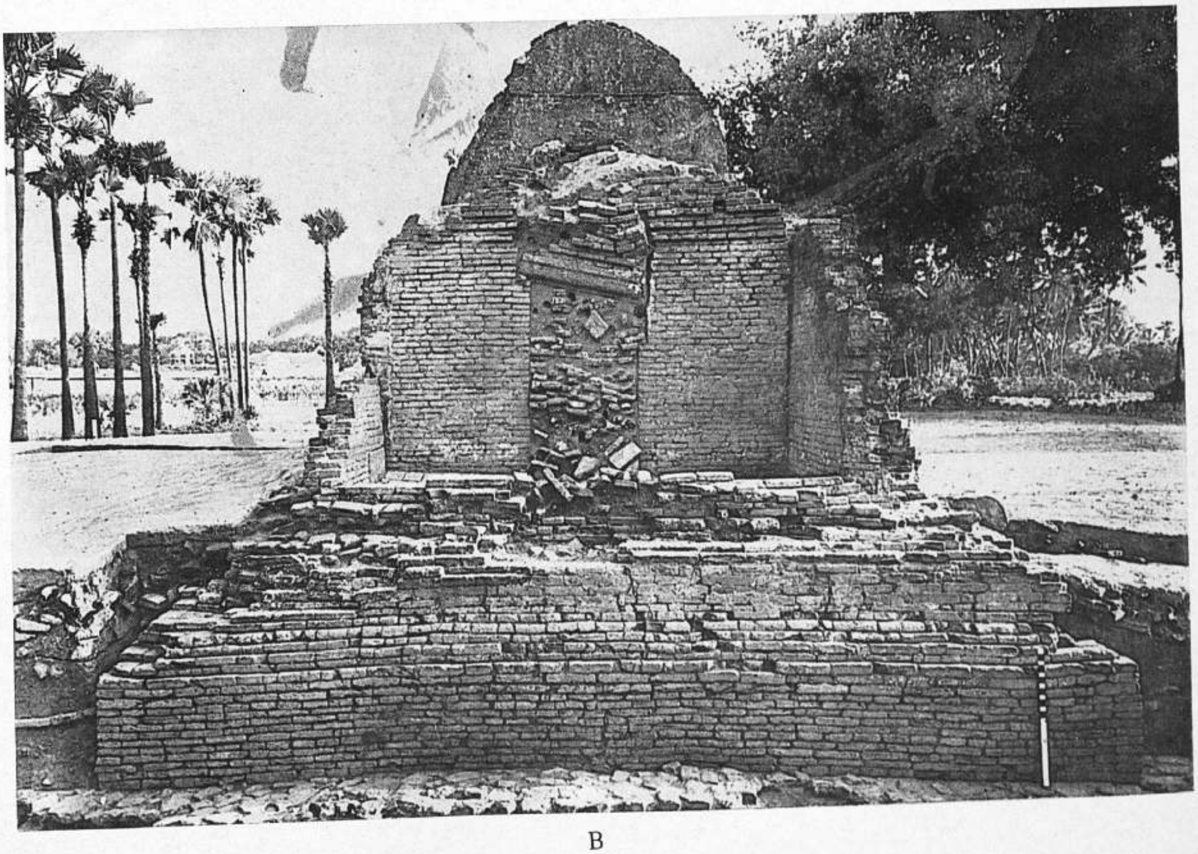
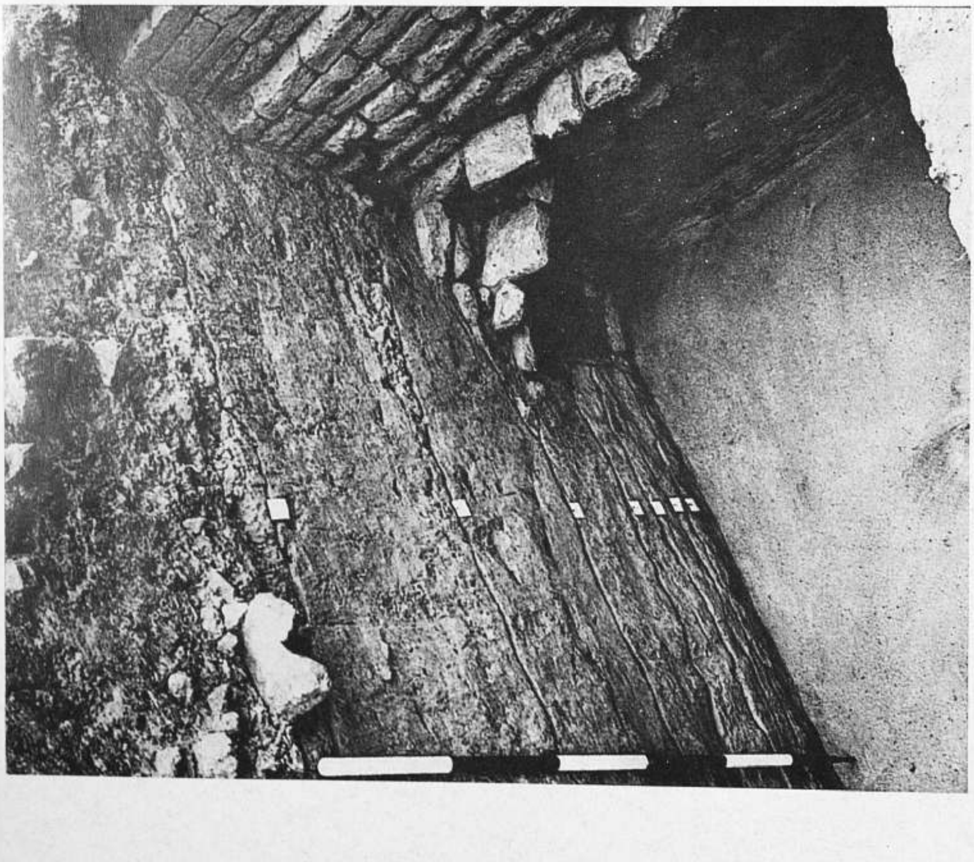


B

Sambapati Amman temple



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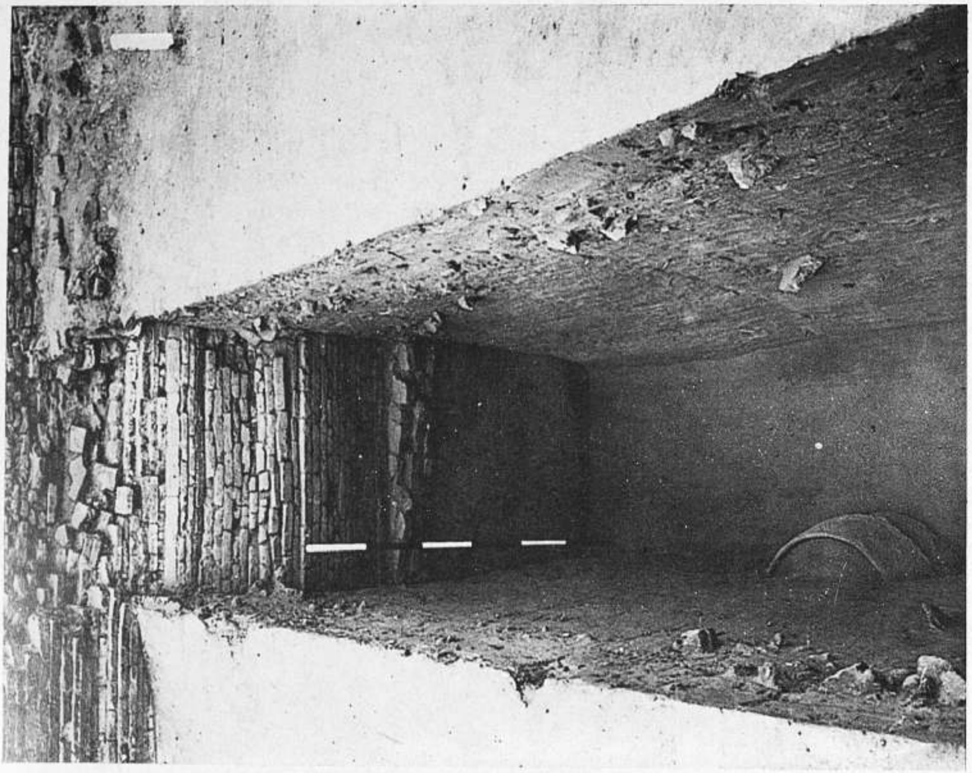
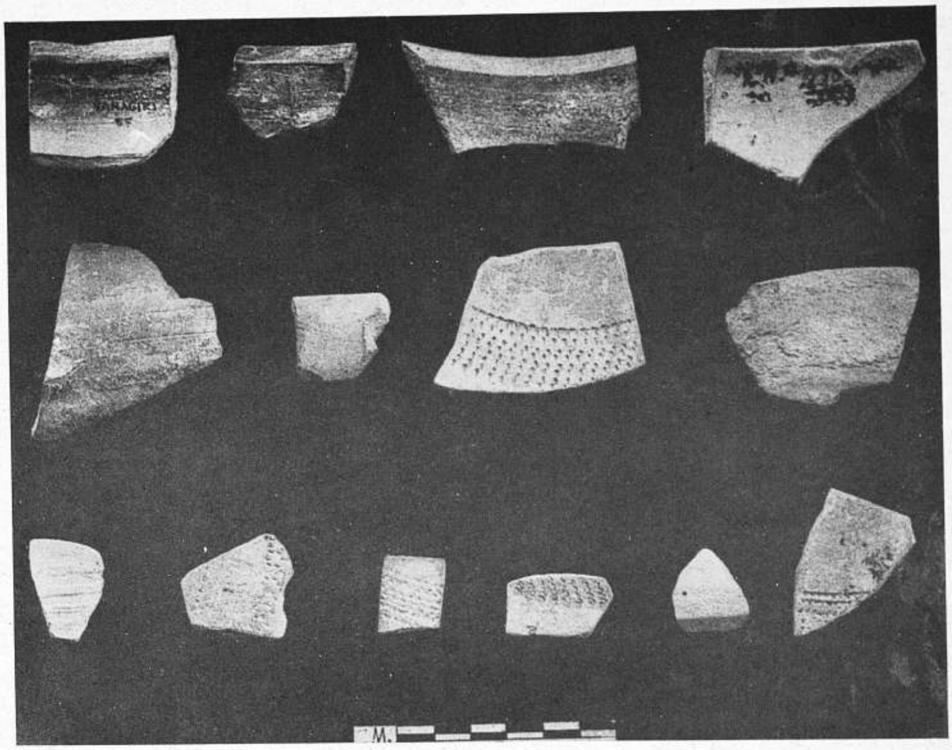


B

Sambapati Amman temple site; A, section looking west, showing layers abutting the structure;
B, view of the trench showing ring well (pre-temple phase)
in the foreground and brick-bat platform and foundational offset of the temple



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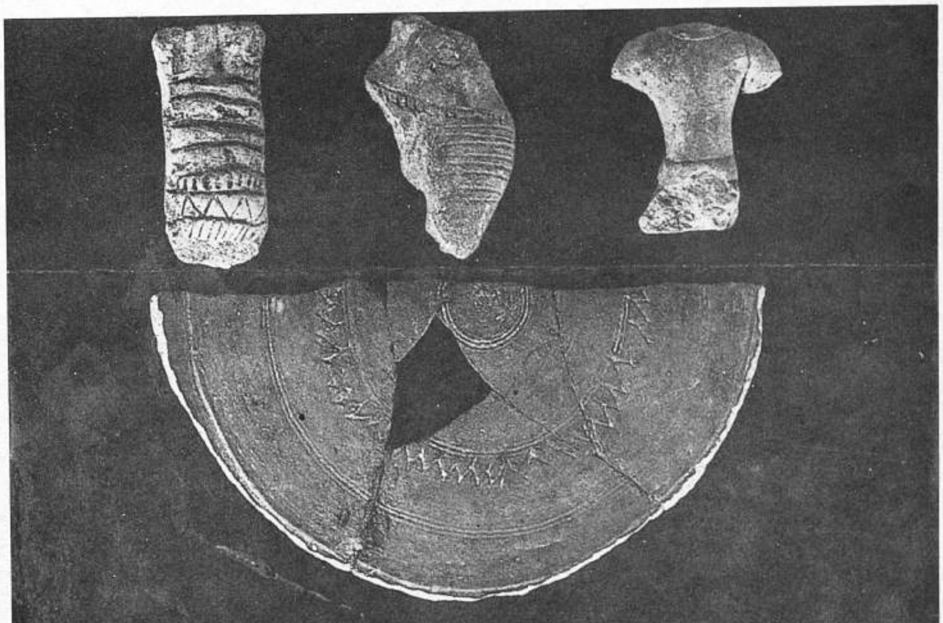
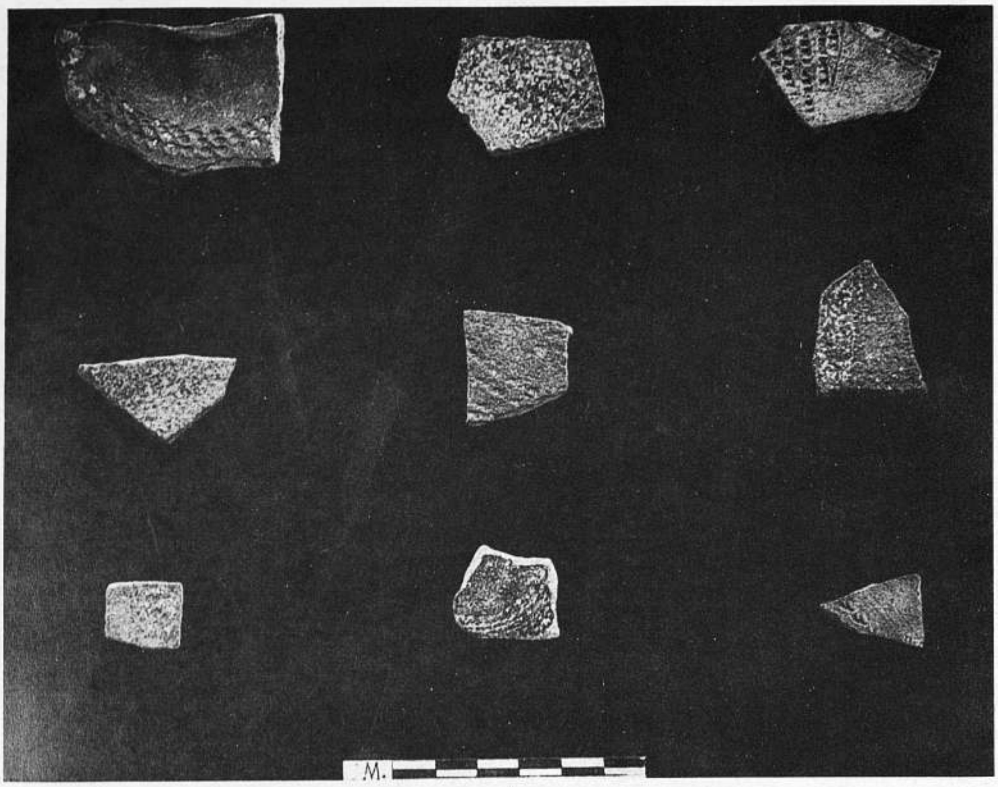


A

A, Vanagiri: Rouletted ware; B, Manigramam: antiquities



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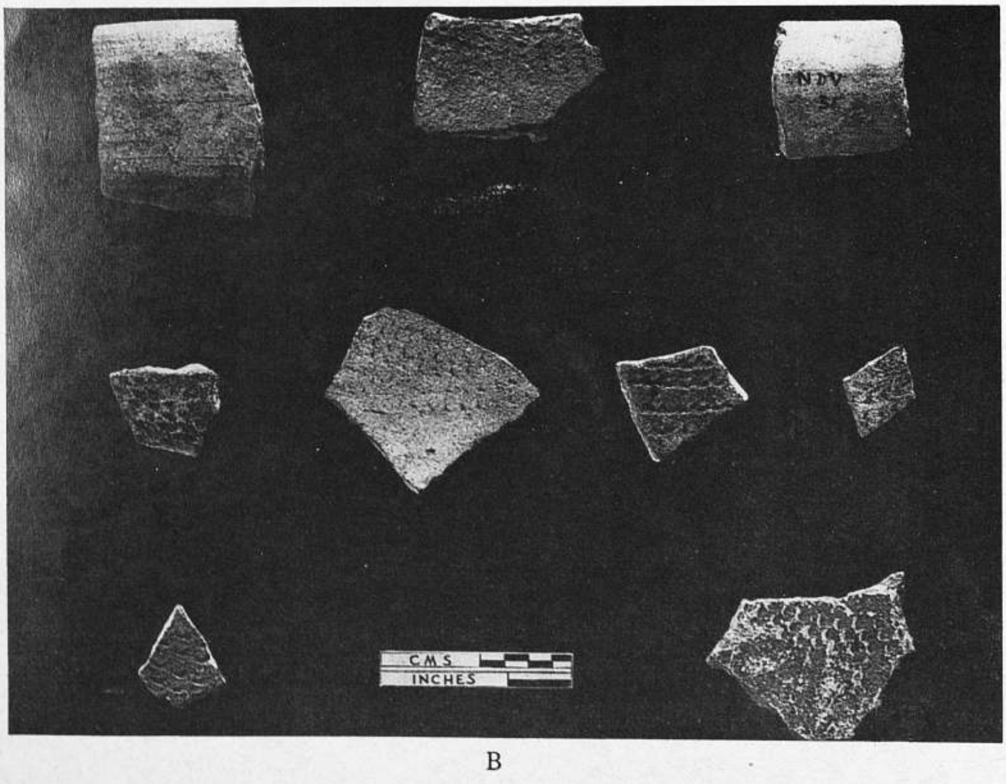
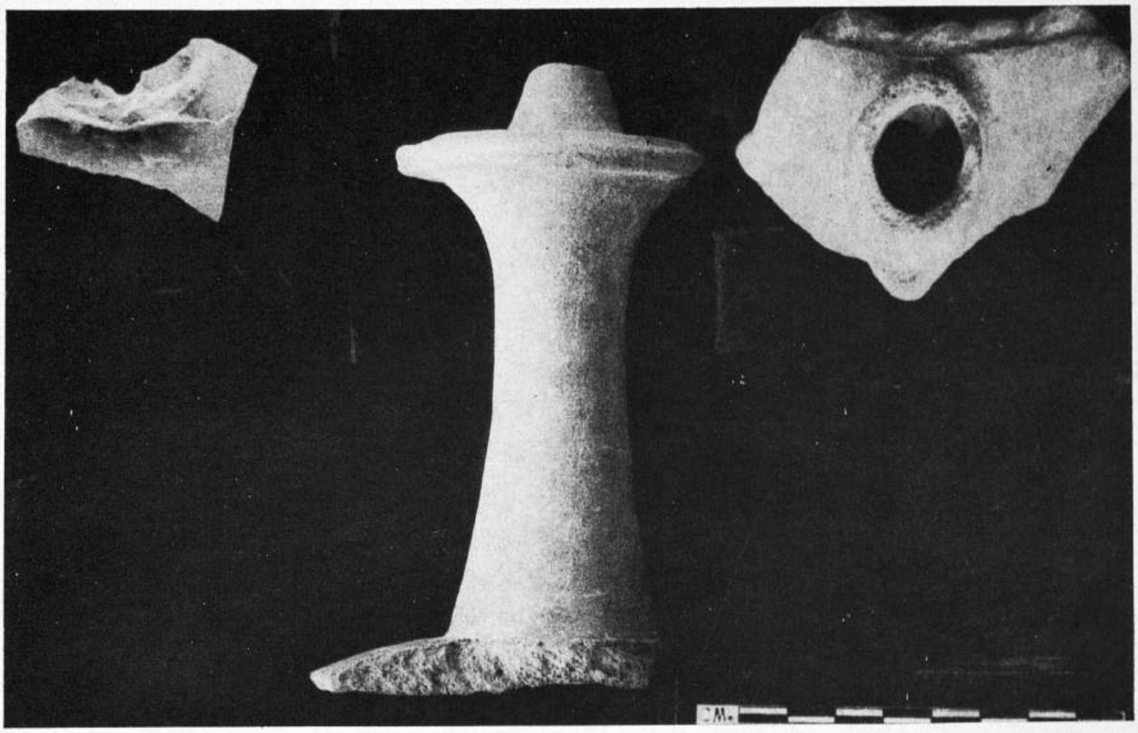


B

Vanagiri: Rouletted Ware



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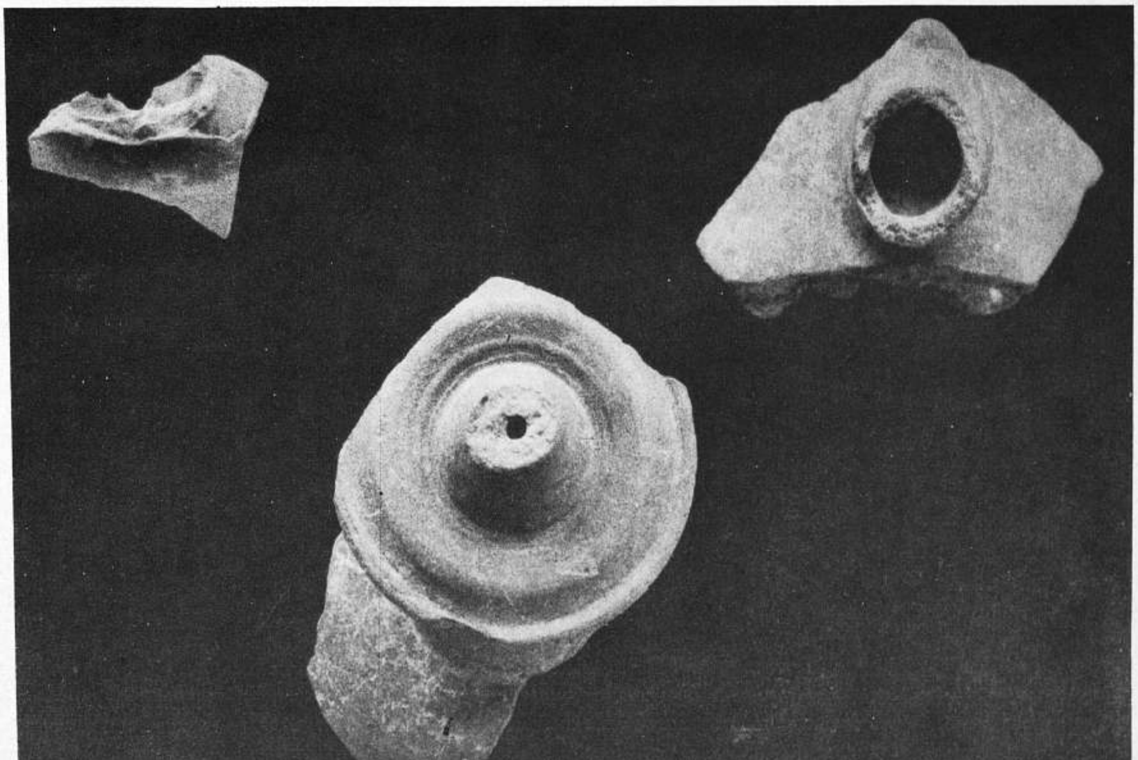
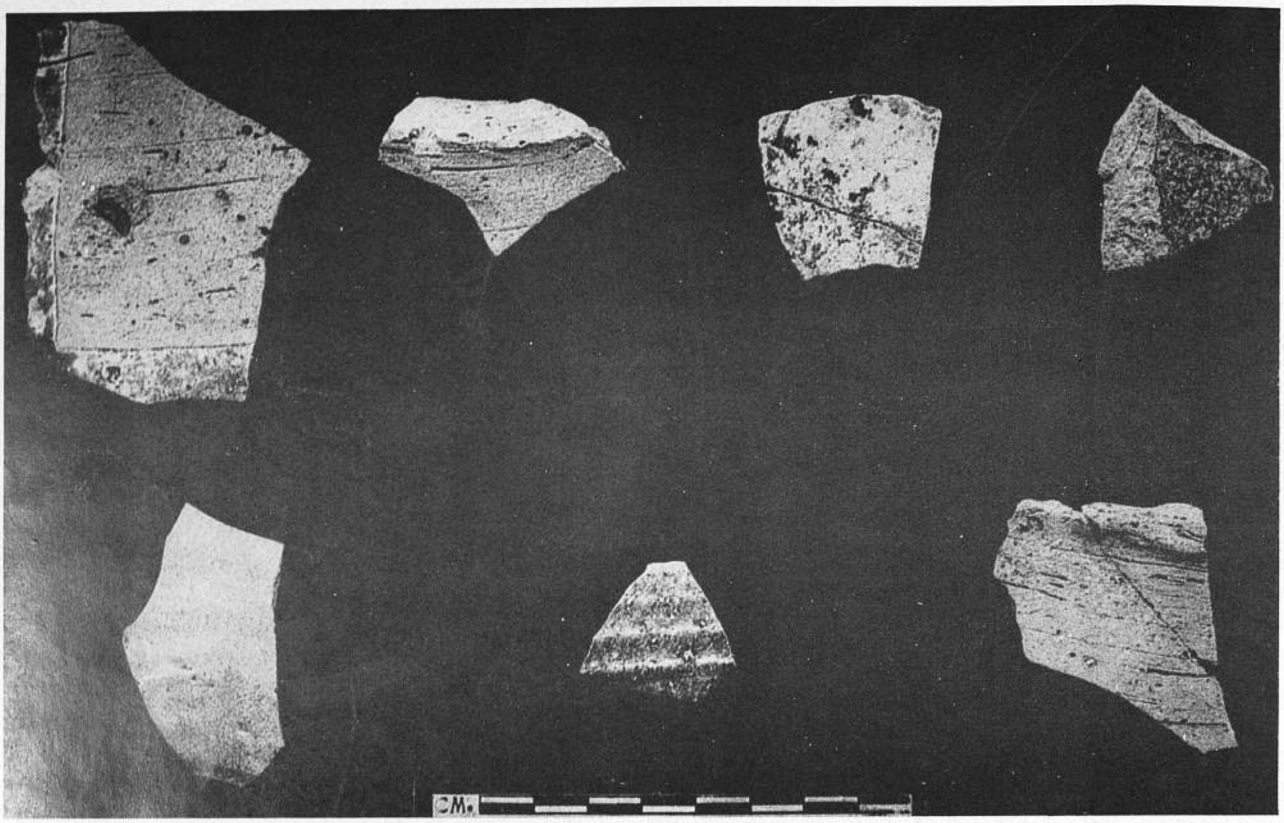


B

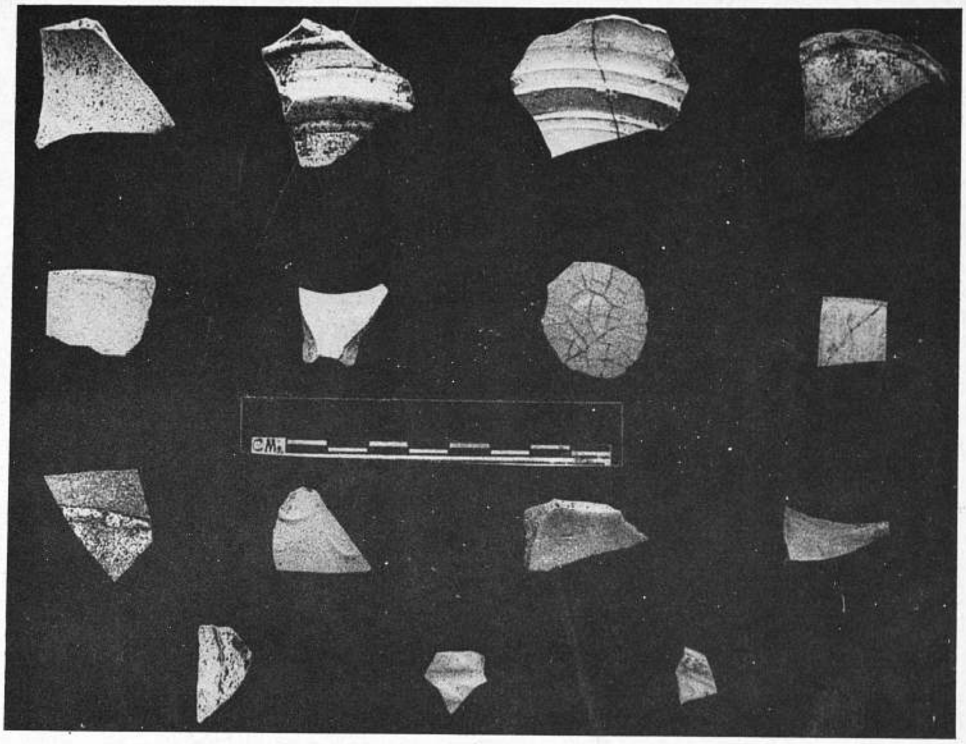
Pallavanesvaram: sprinkler, knob and spout



A

B

A, Vellaiyan Iruppu and Pallavanisvaram: green glazed pottery; B, Vellaiyan Iruppu: parts of ring stand, spout, etc. all in pink fabric



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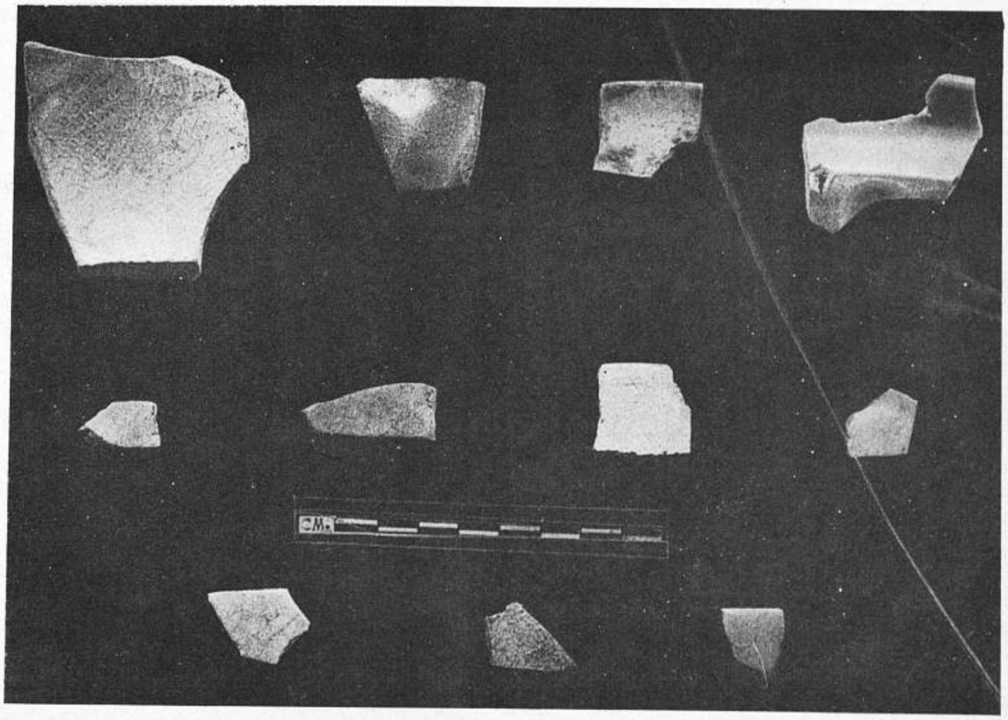
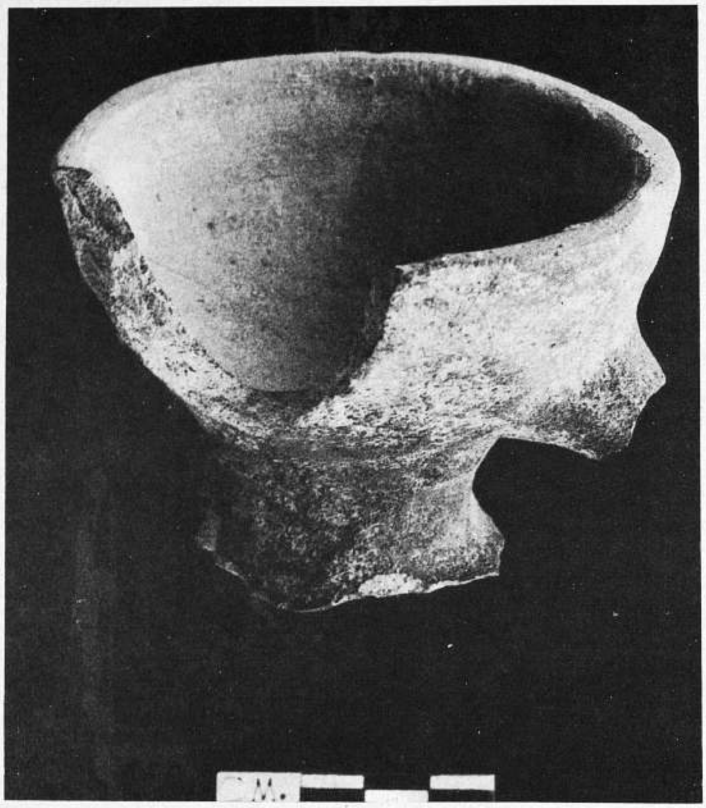


B

Vellaiyan Iruppu: Chinese, celadon and porcelain pottery



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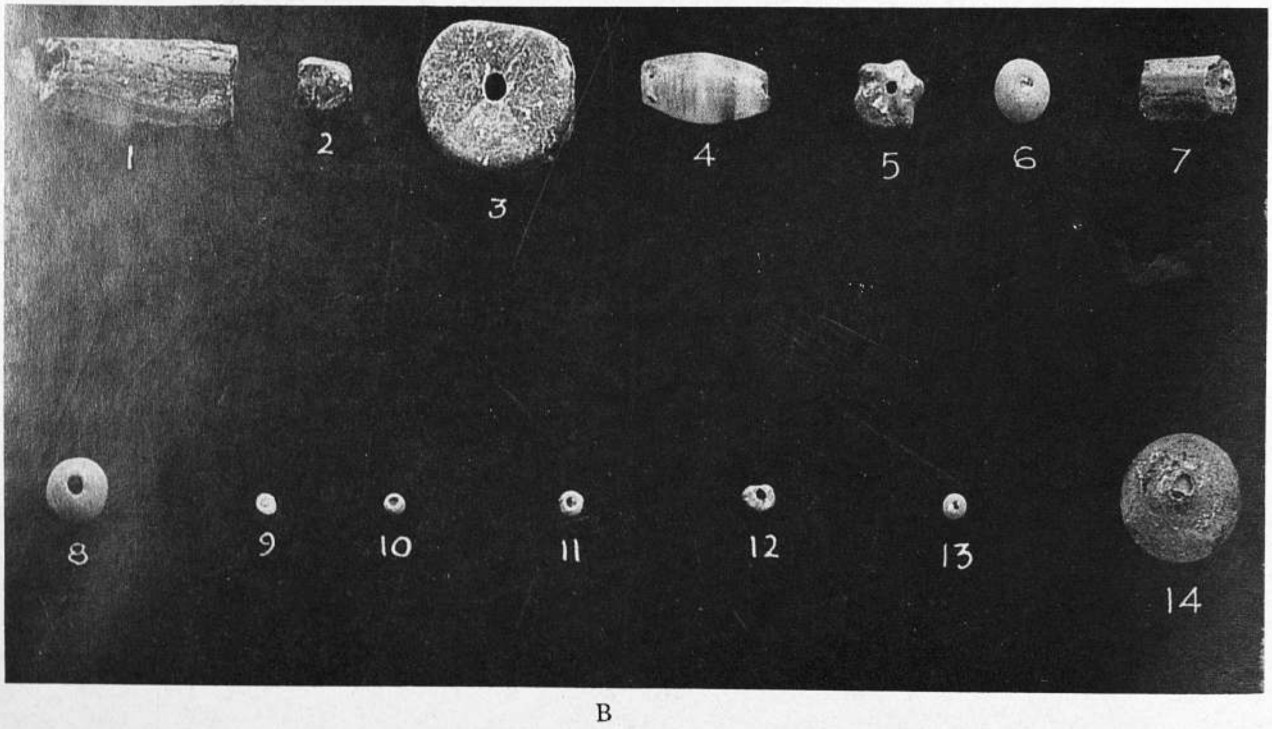
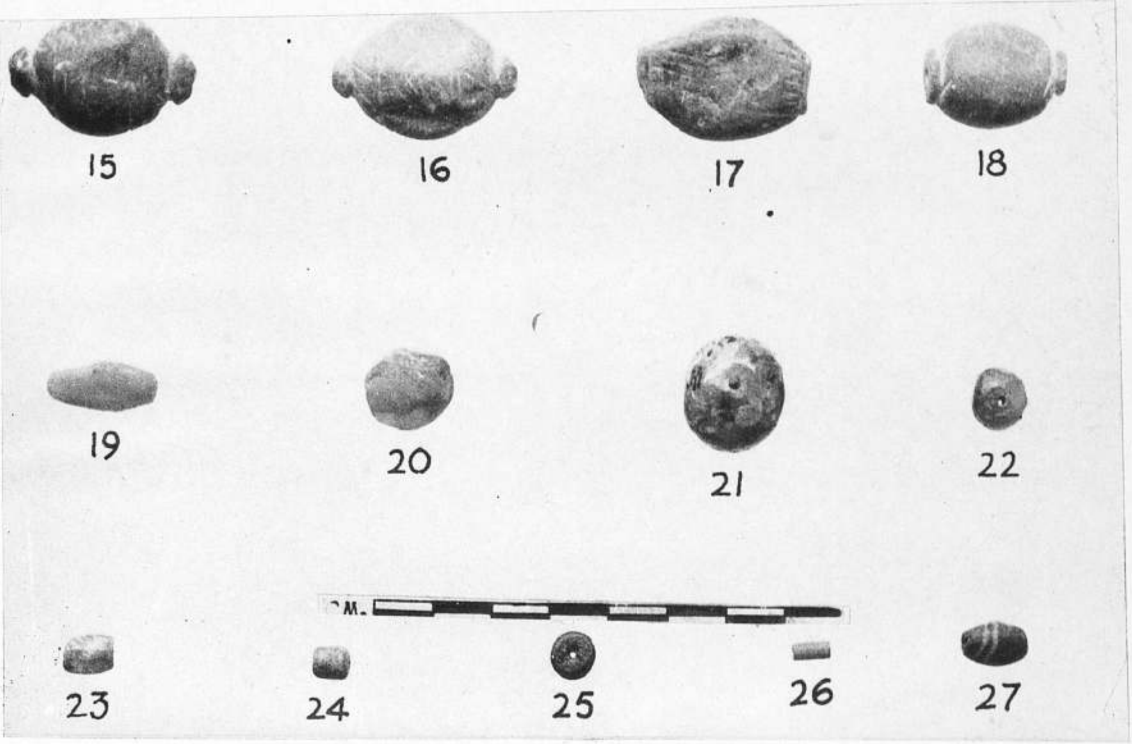


B

A, Vellaiyan Iruppu: grey ware cup with spout;
B, Manigramam and Mangaimadam: beads



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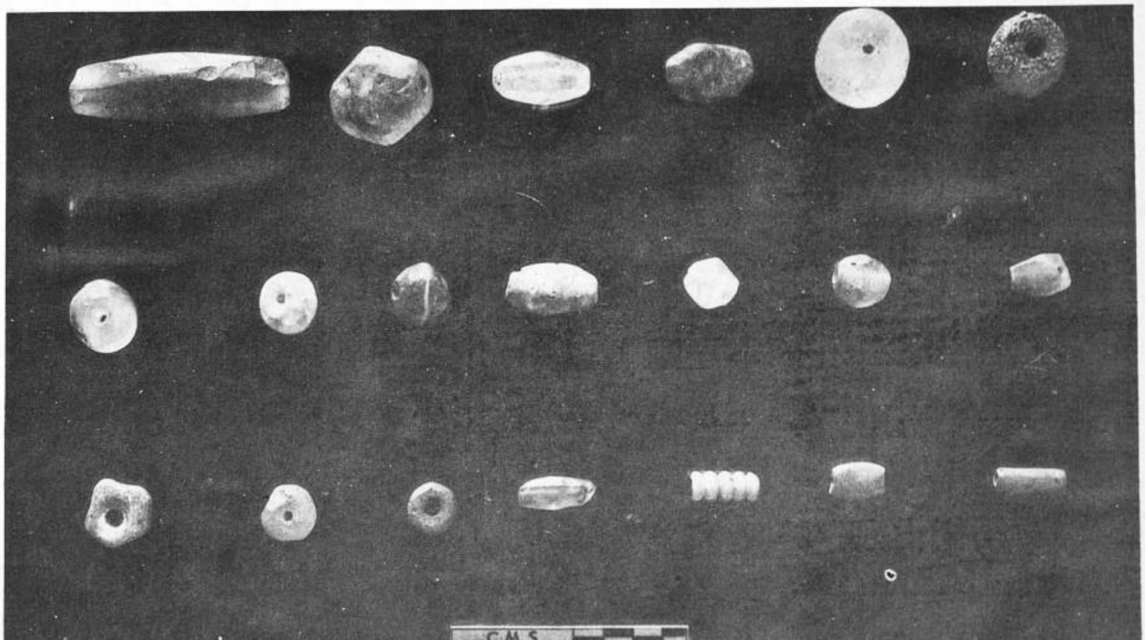
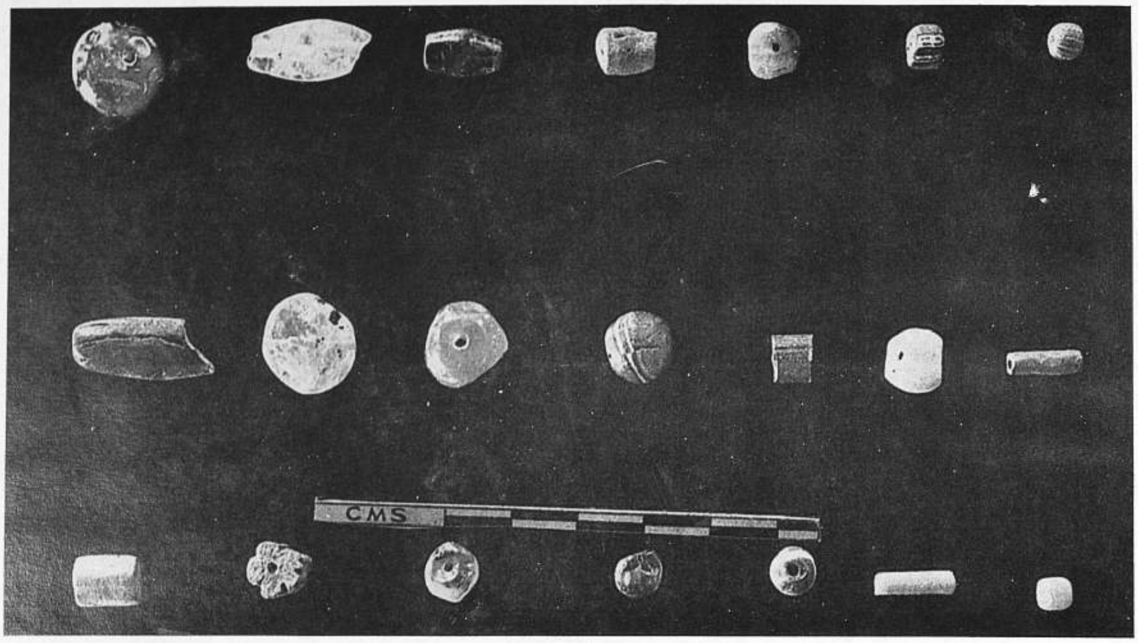


B

Beads



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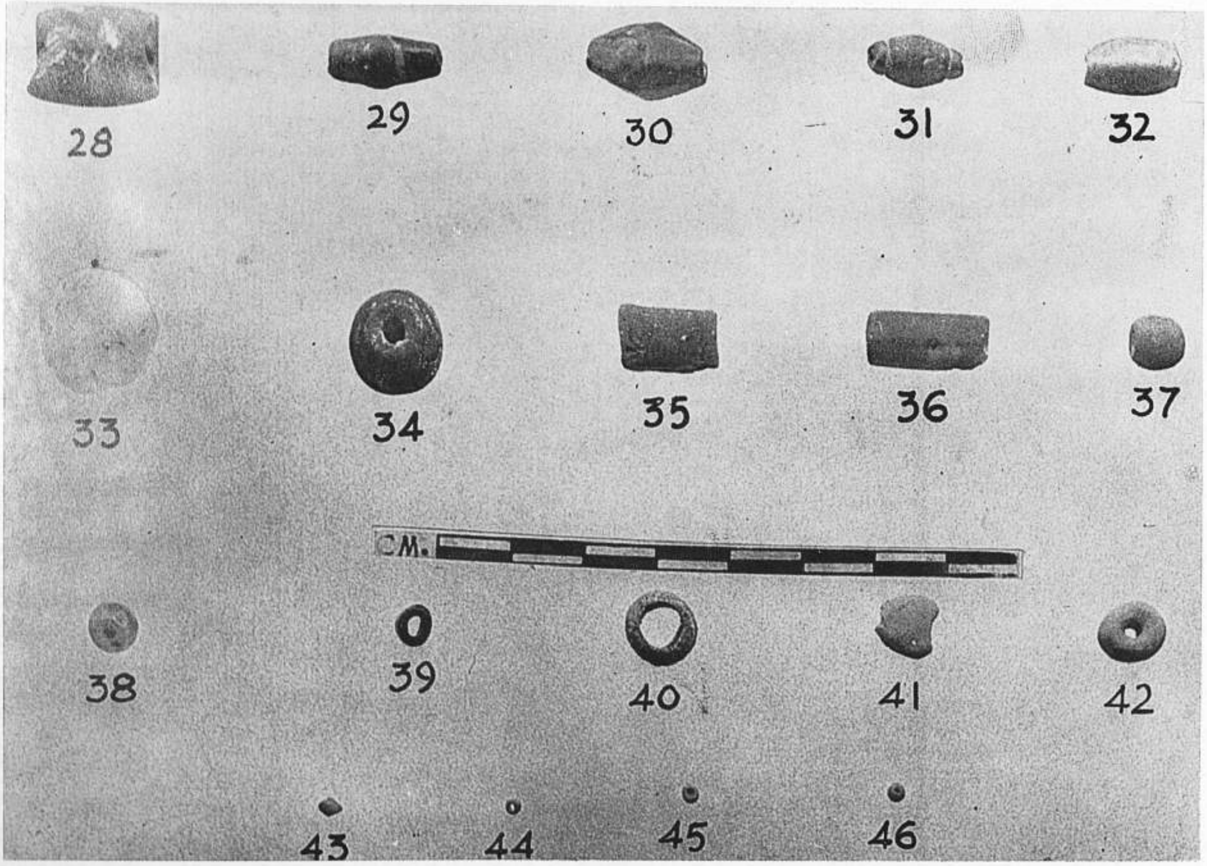
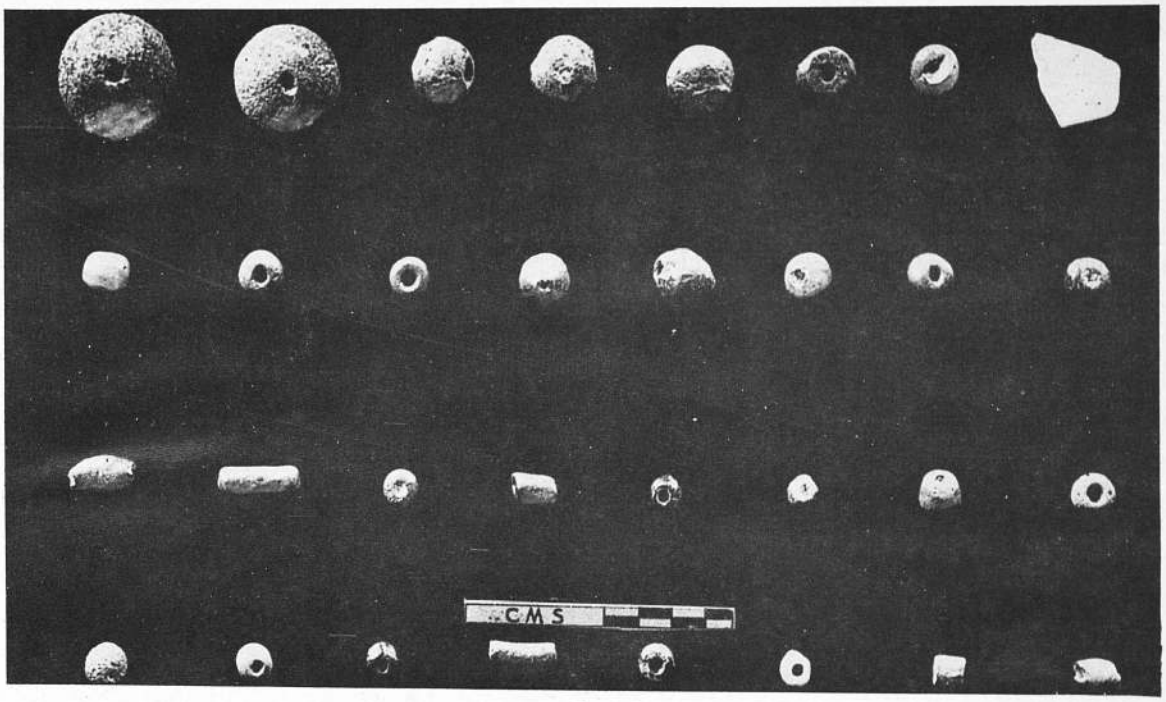


B

Beads from: A, Vanagiri and B, Pallavanisvaram



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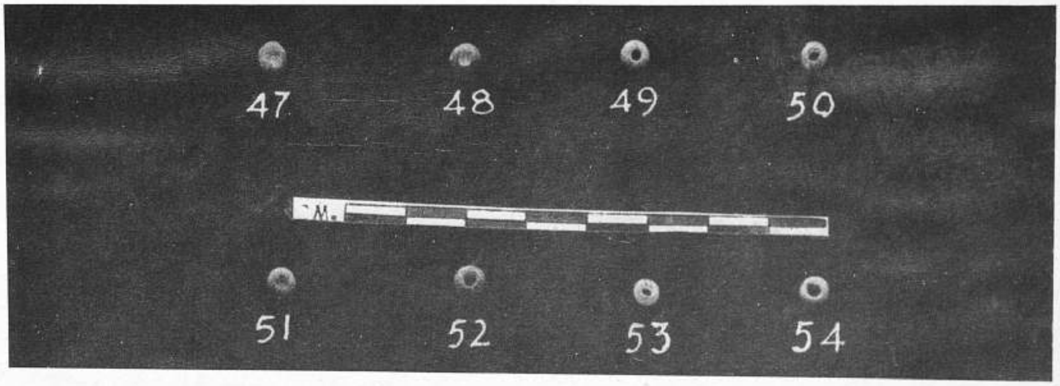
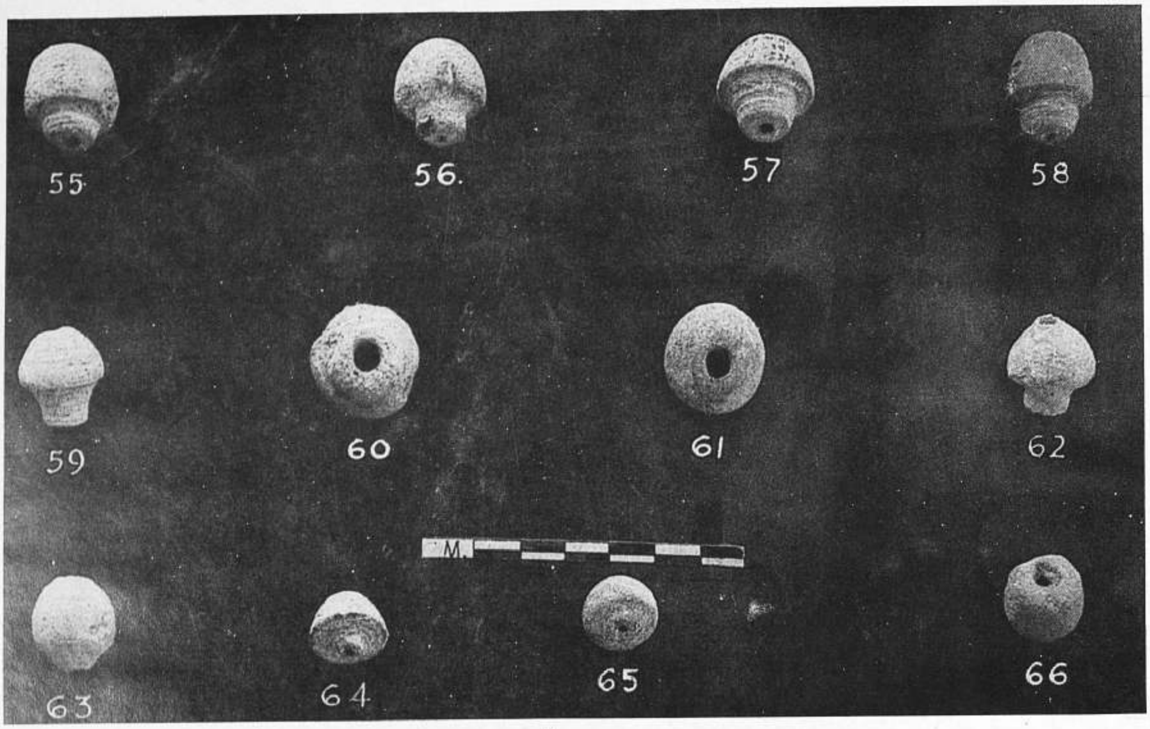


B

Vellaiyan Iruppu: A, beads from different levels; B, micro beads



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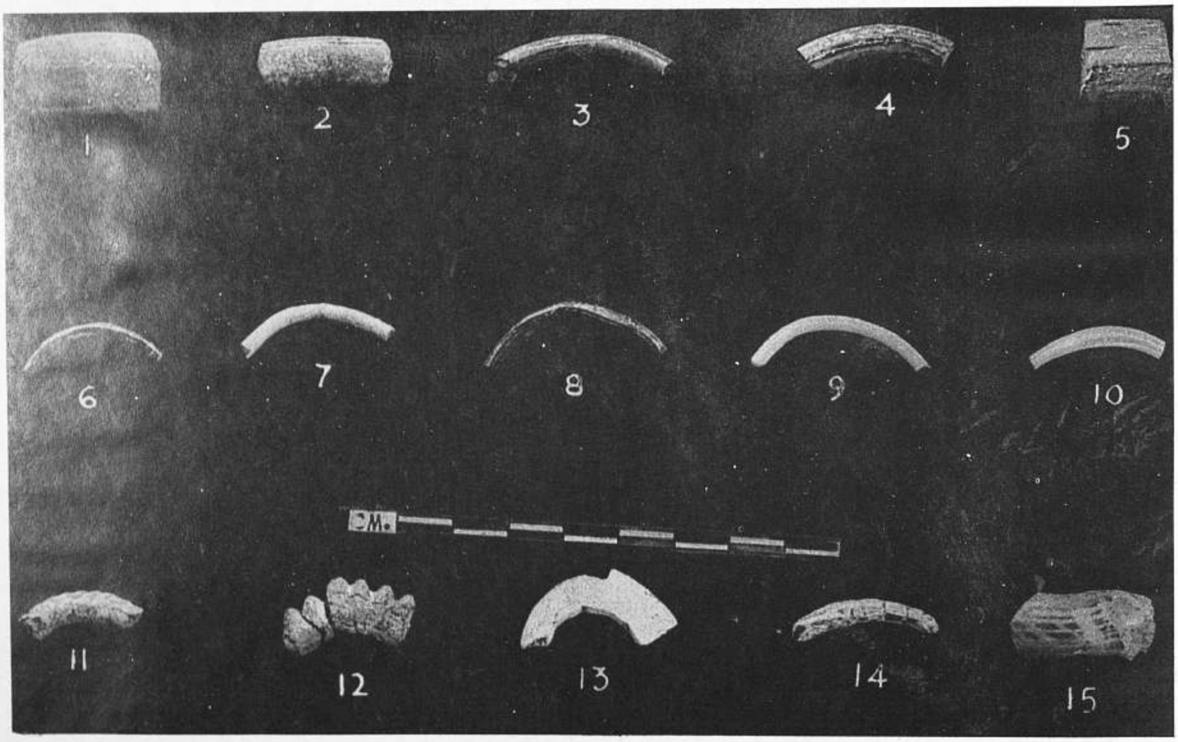
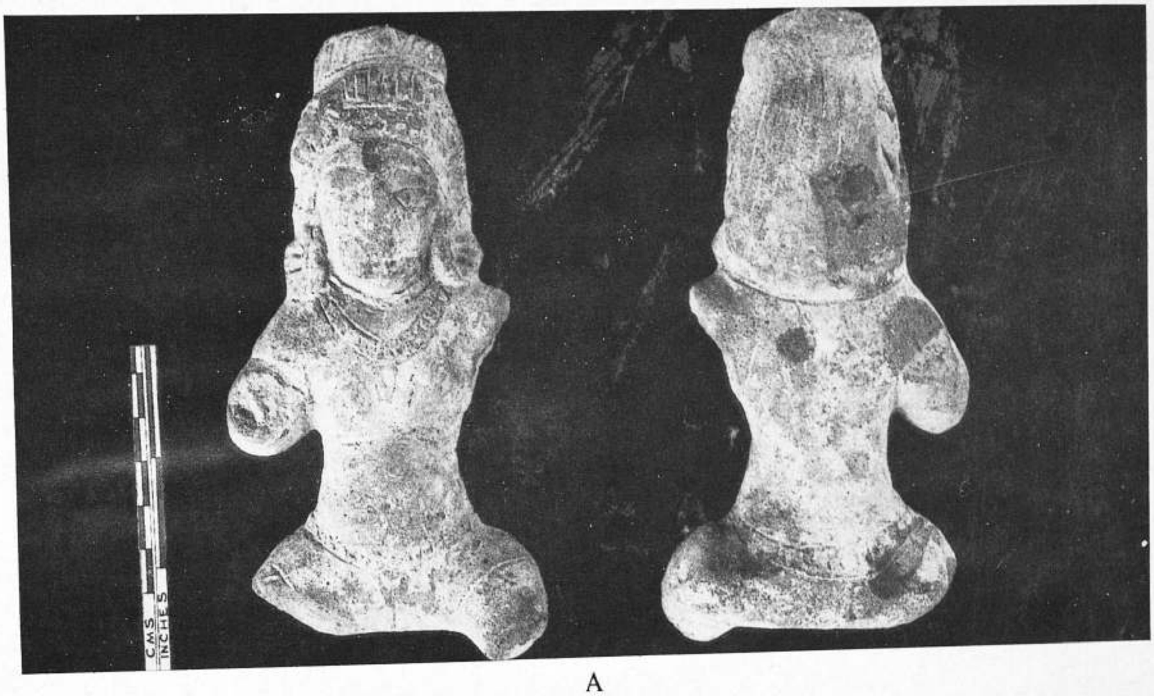


B

Pallavanisvaram and Vellaiyan Iruppu: A, terracotta beads and spindle whorls; B, bangle pieçes



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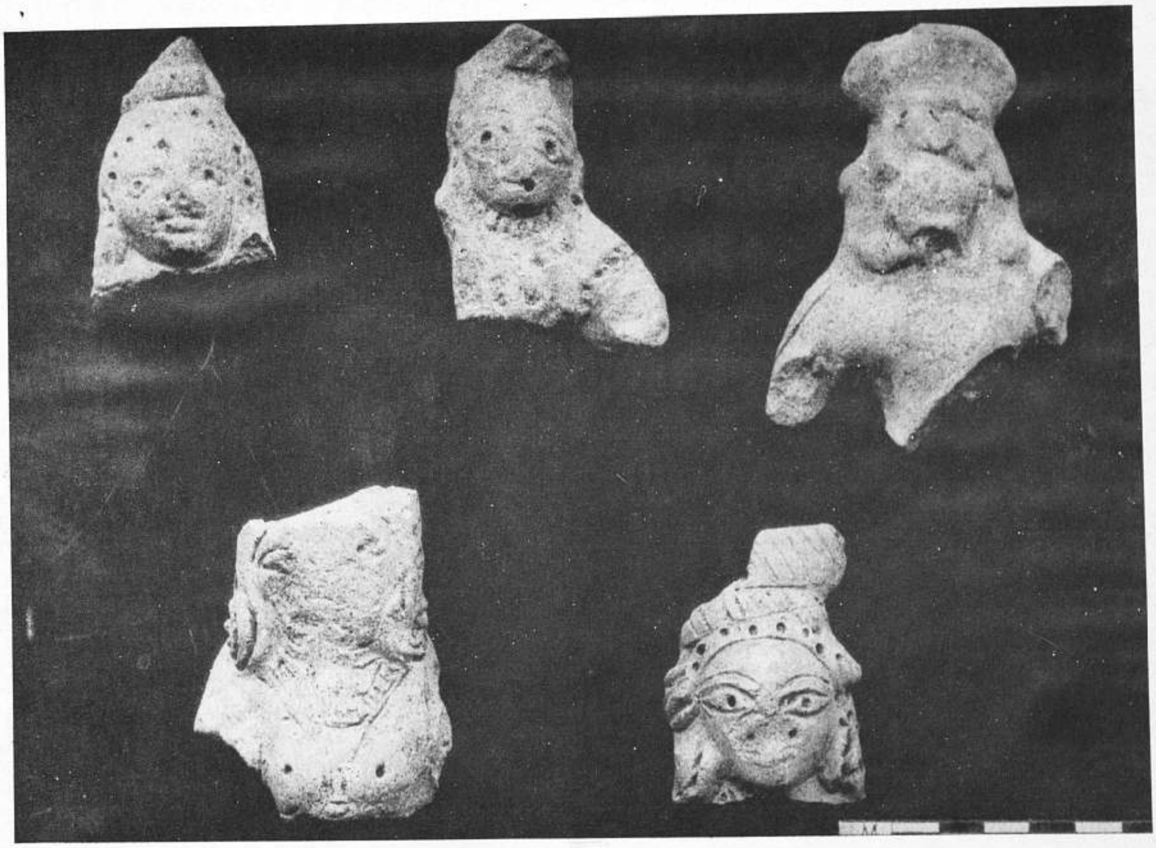
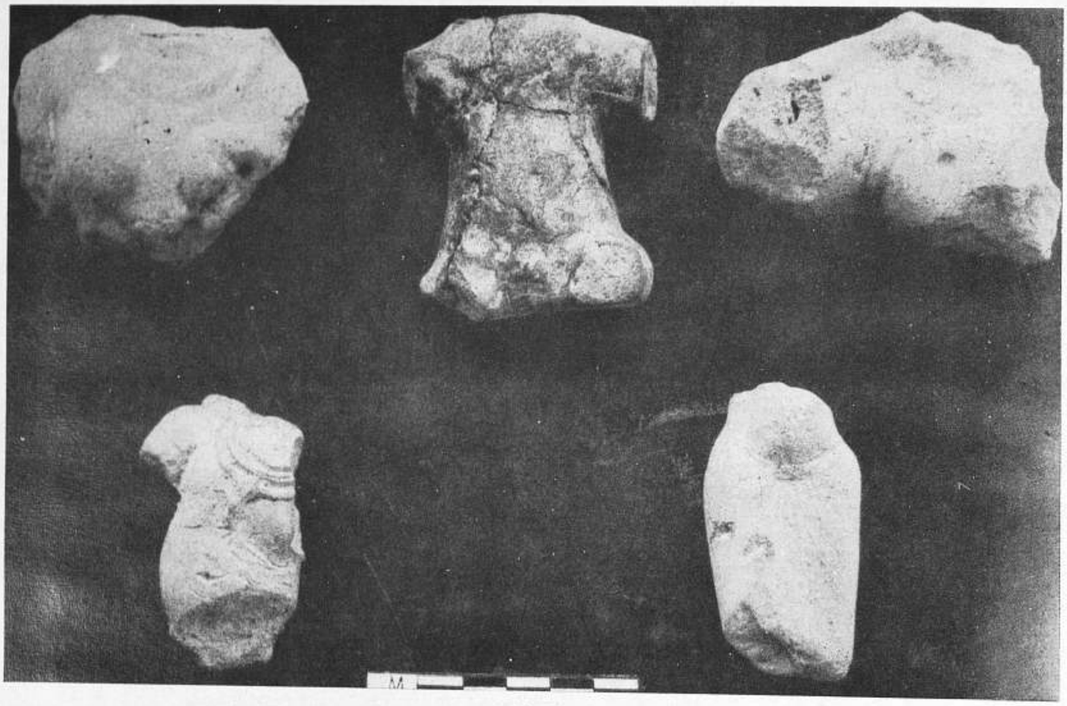


B

Terracotta figurines : A, Kaveripattinam; B, Pallavanisvaram



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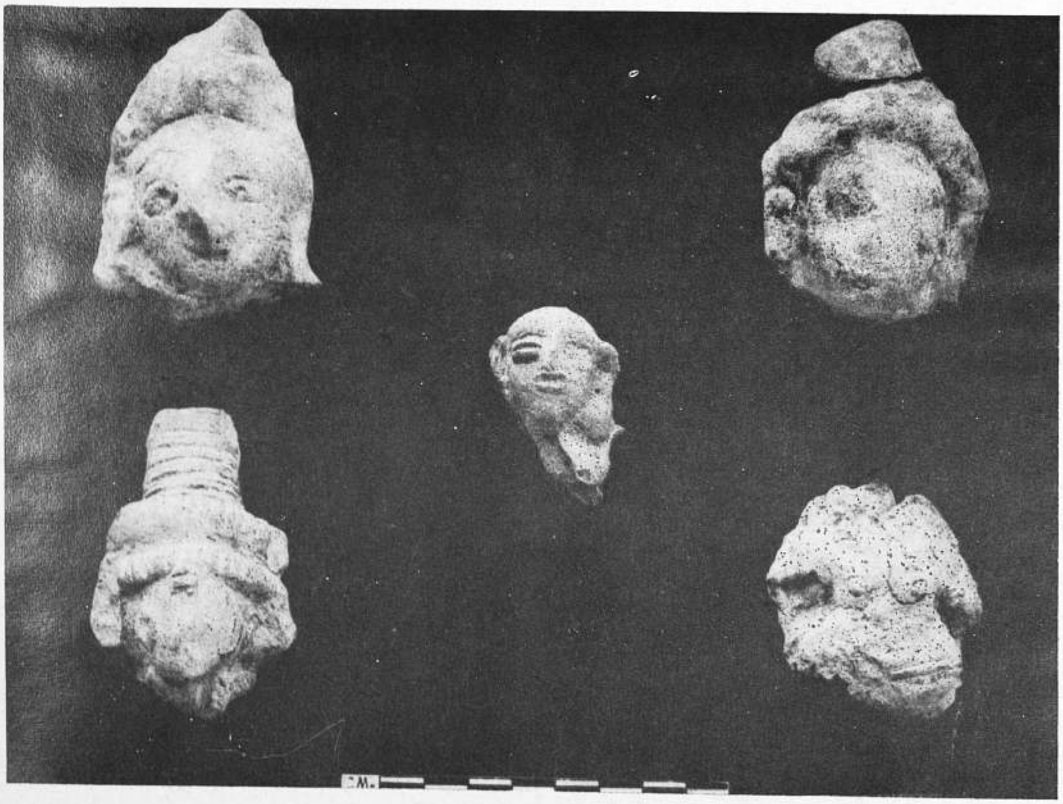
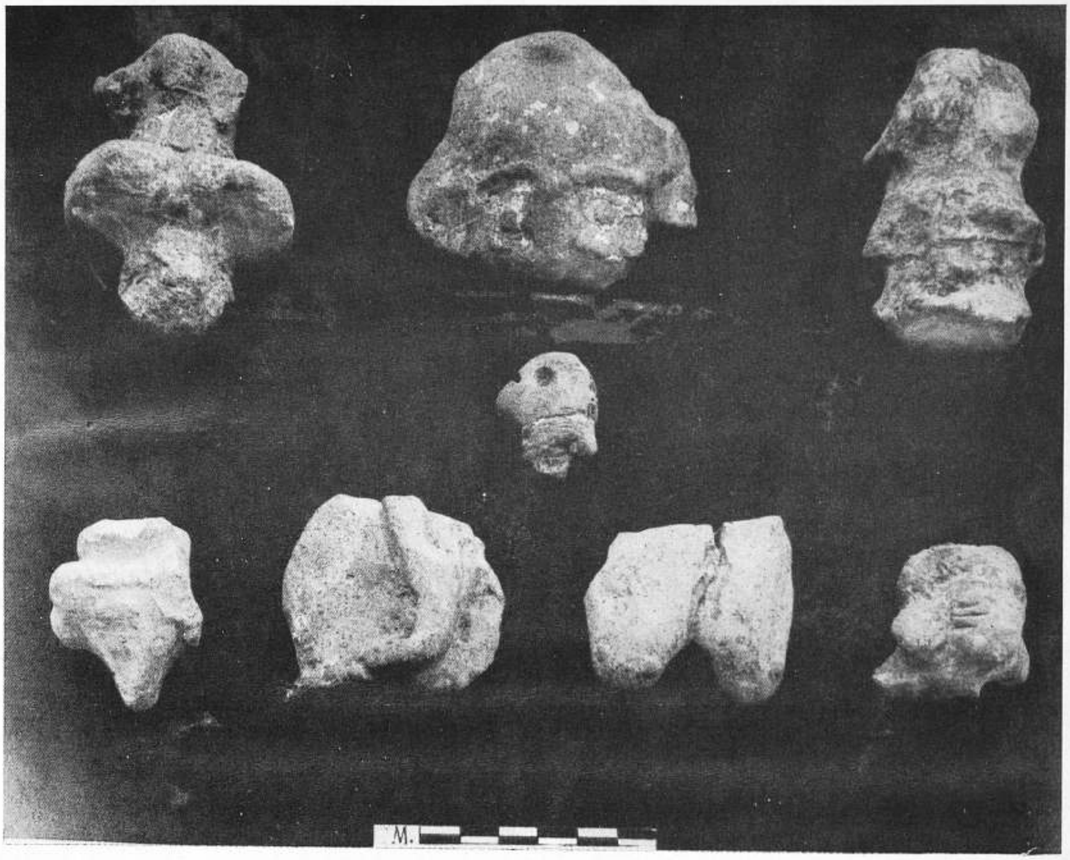


B

Terracotta figurines: A, Pallavanisvaram; B, Vellaiyan Iruppu

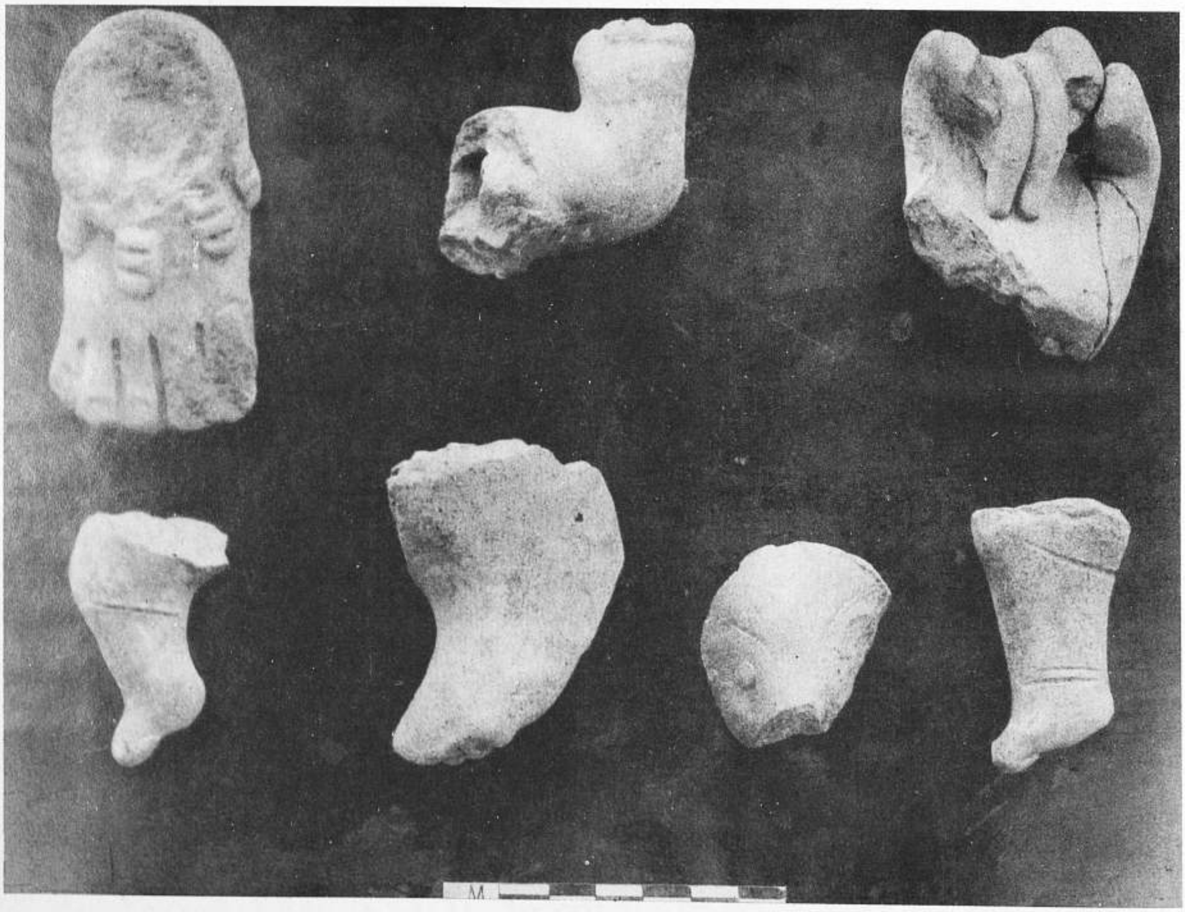


A

B

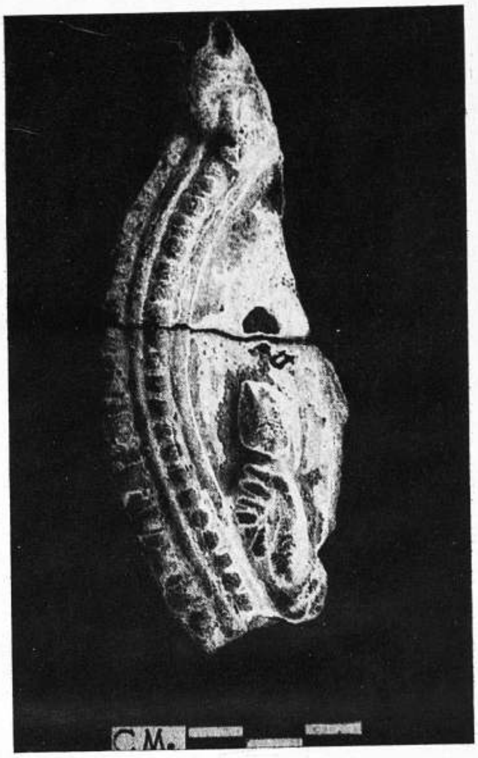
Terracotta figurines from Vellaiyan Iruppu

A



B

Terracotta figurincs: A, Vellaiyan Iruppu; B, Pallavanisvaram



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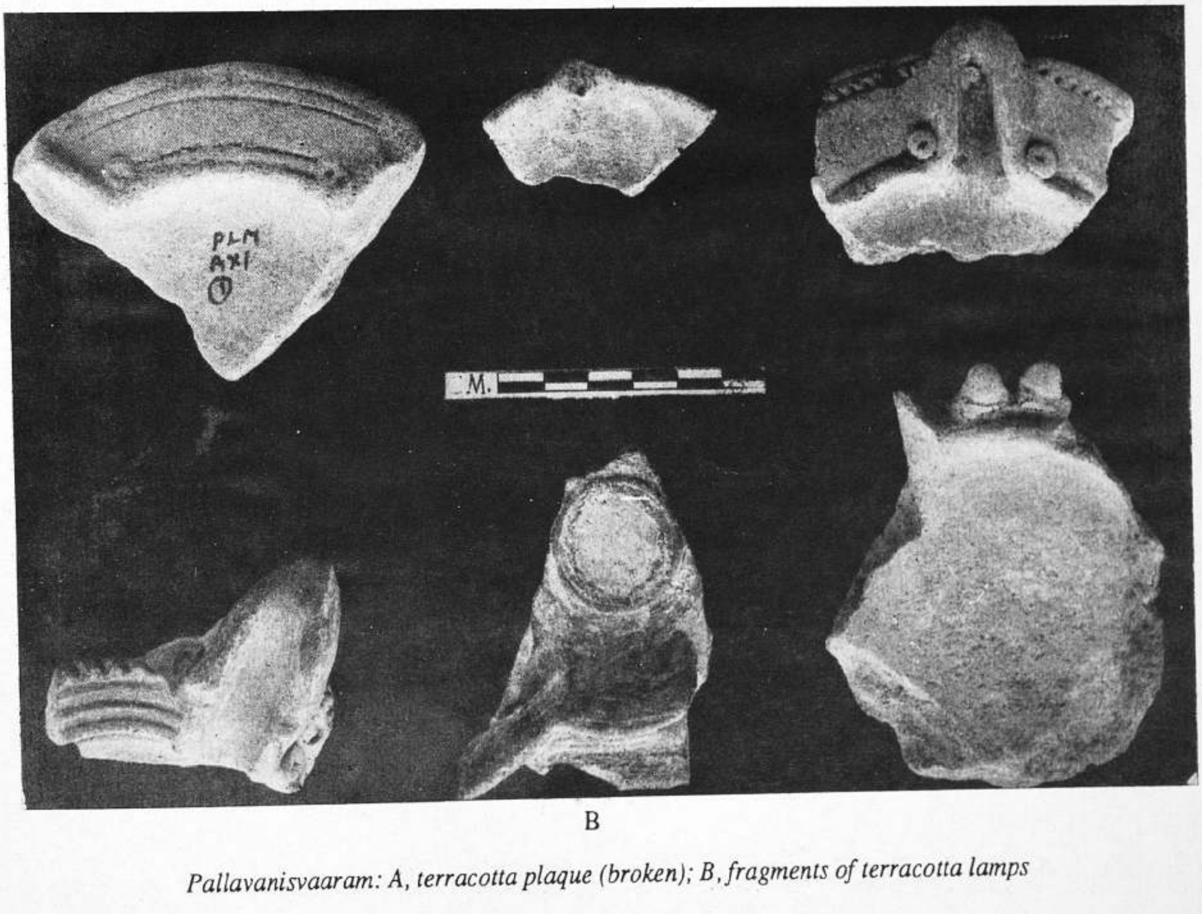
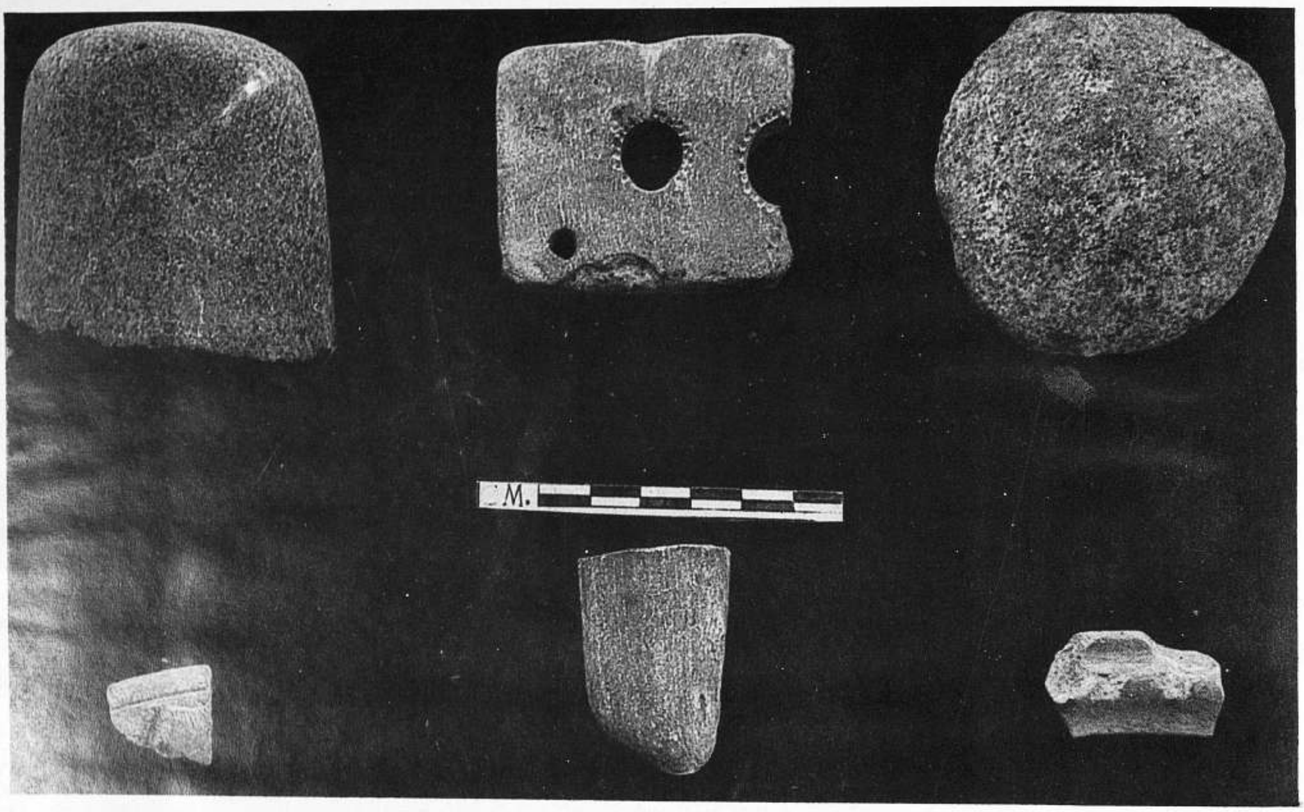


B

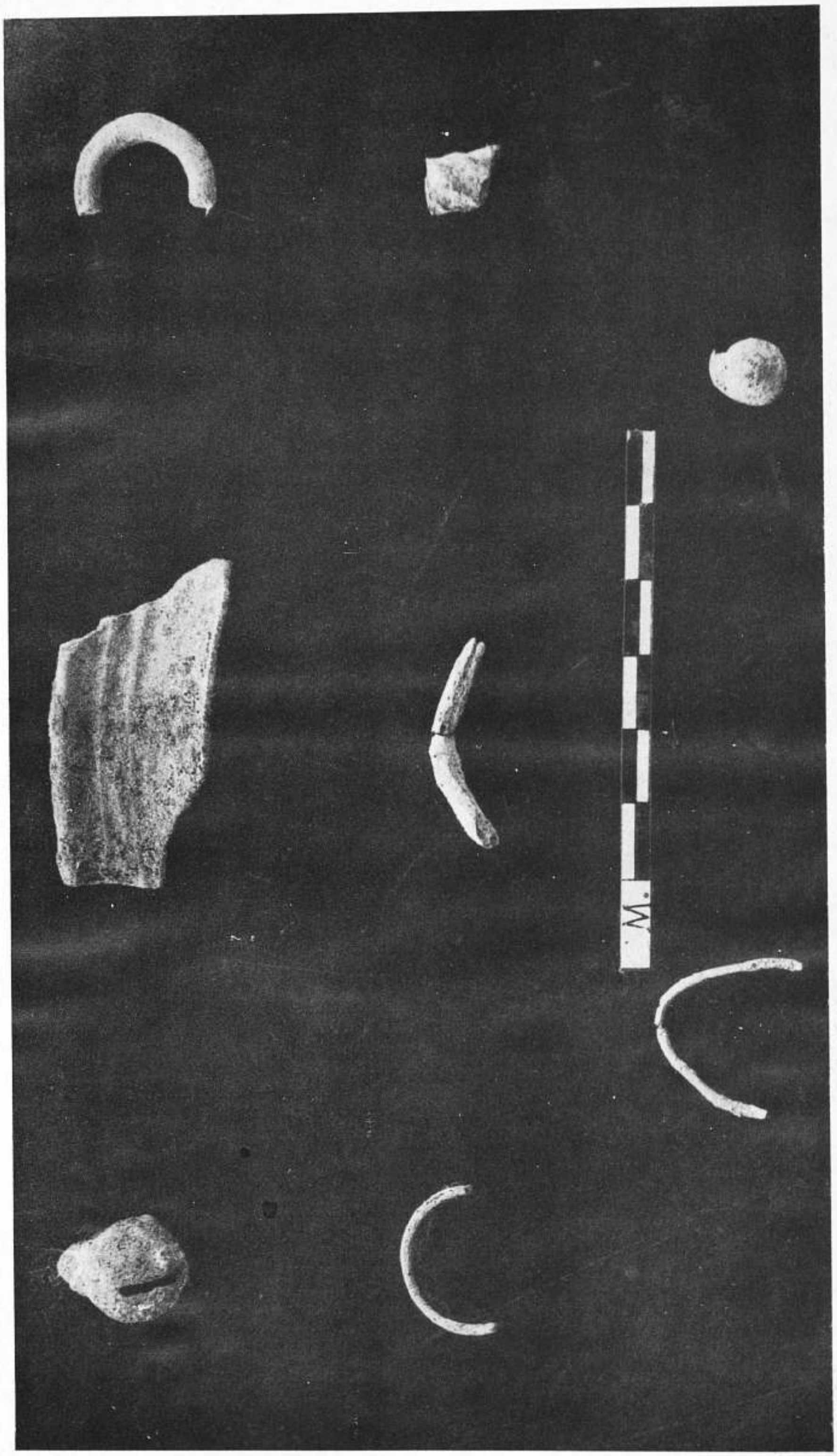
Pallavanisvaaram: A, terracotta plaque (broken); B, fragments of terracotta lamps



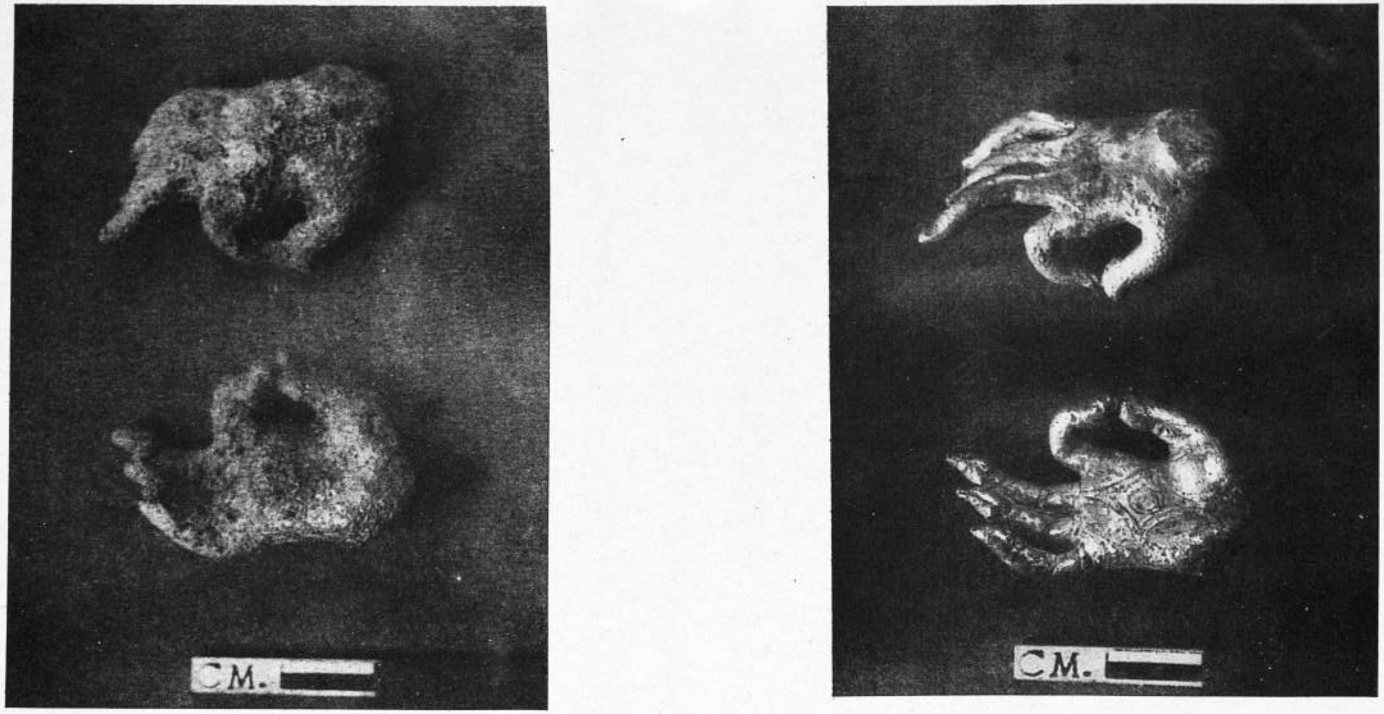
A

B

Vellaiyan Iruppu: stone objects

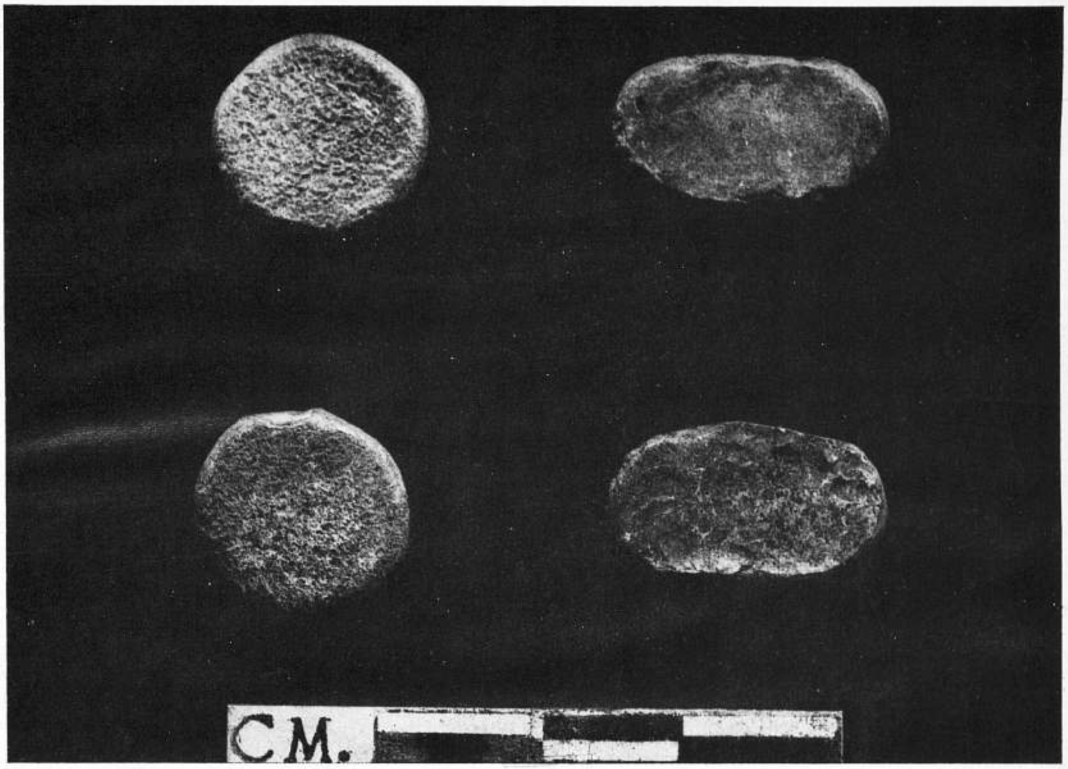


Copper objects form Pallavanisvaram and Vellaiyan Iruppu

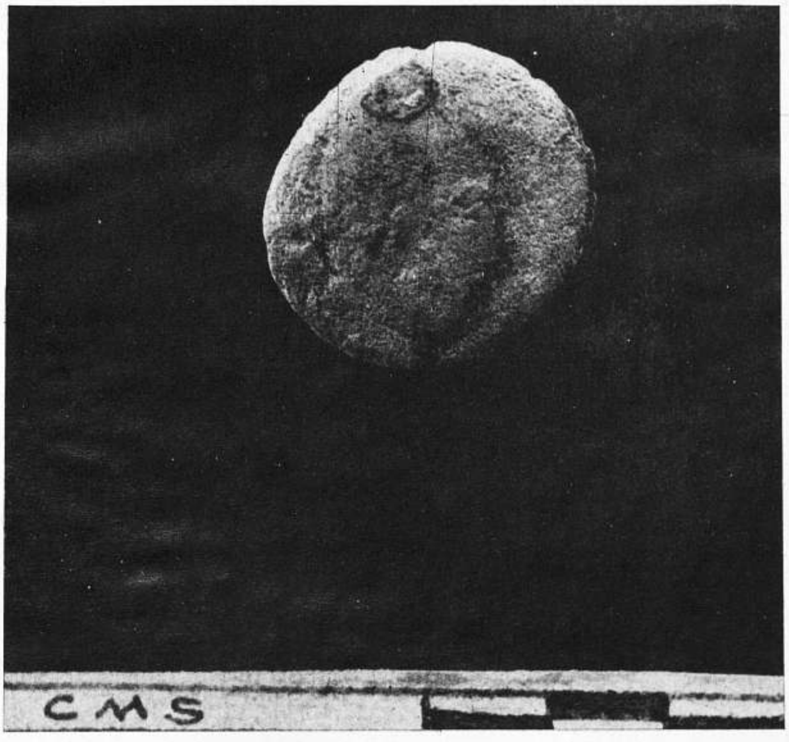


A B

Closure view of the mutilated hands (bronze) from Pallavanisvaram:
A, before chemical treatment; B, after chemical treatment



A



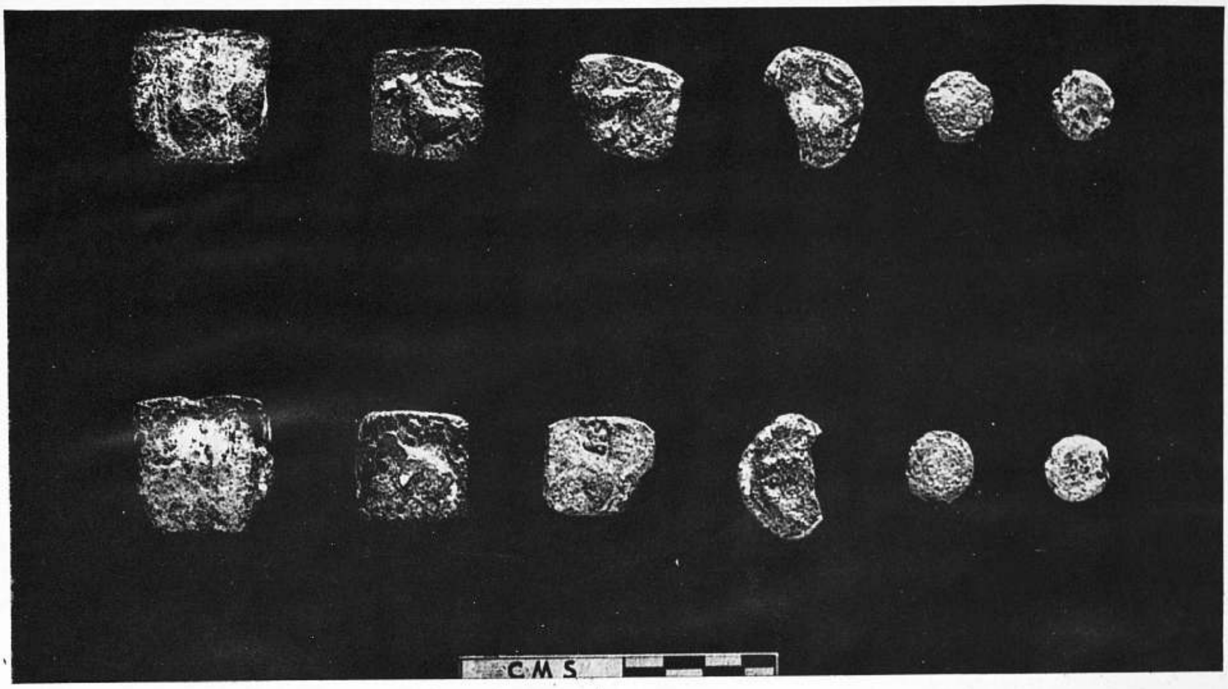
B

A, Vanagiri: punch-marked coines (surface collection);
B, Vellaiyan Iruppu: Roman coin (lead)

A

B

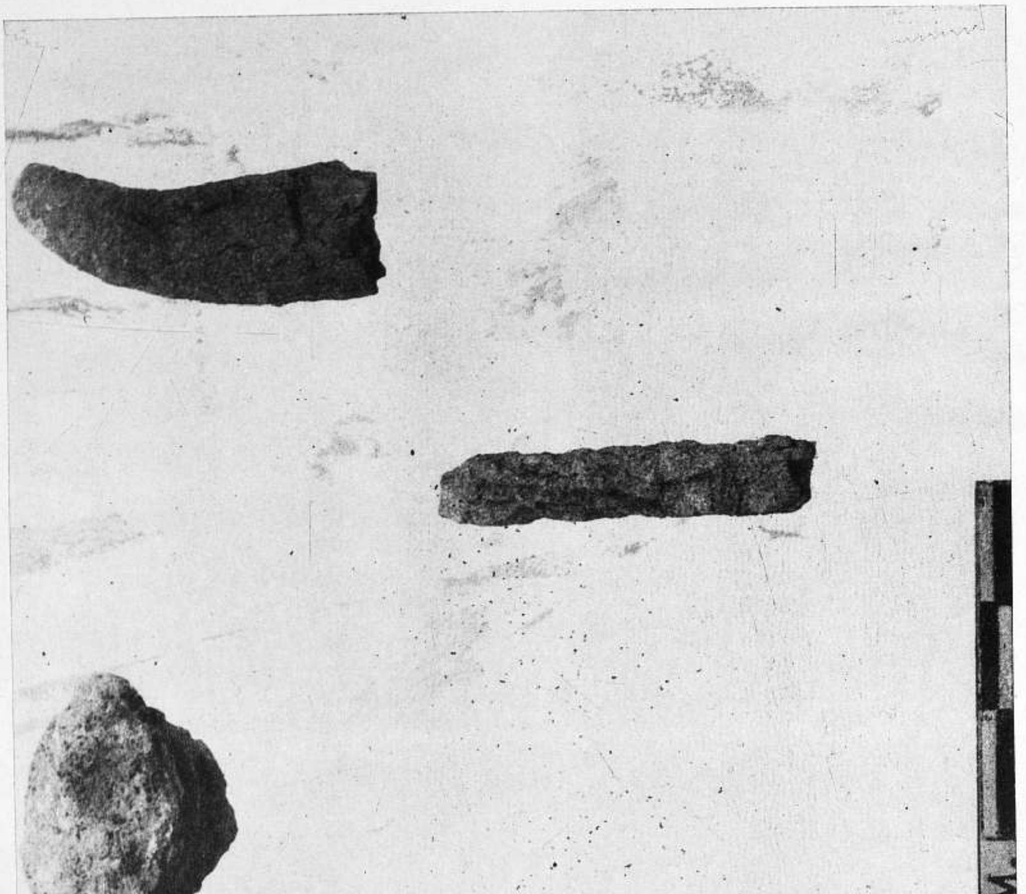
Copper coins: A, from Manigramam and B, fromVanagiri



A

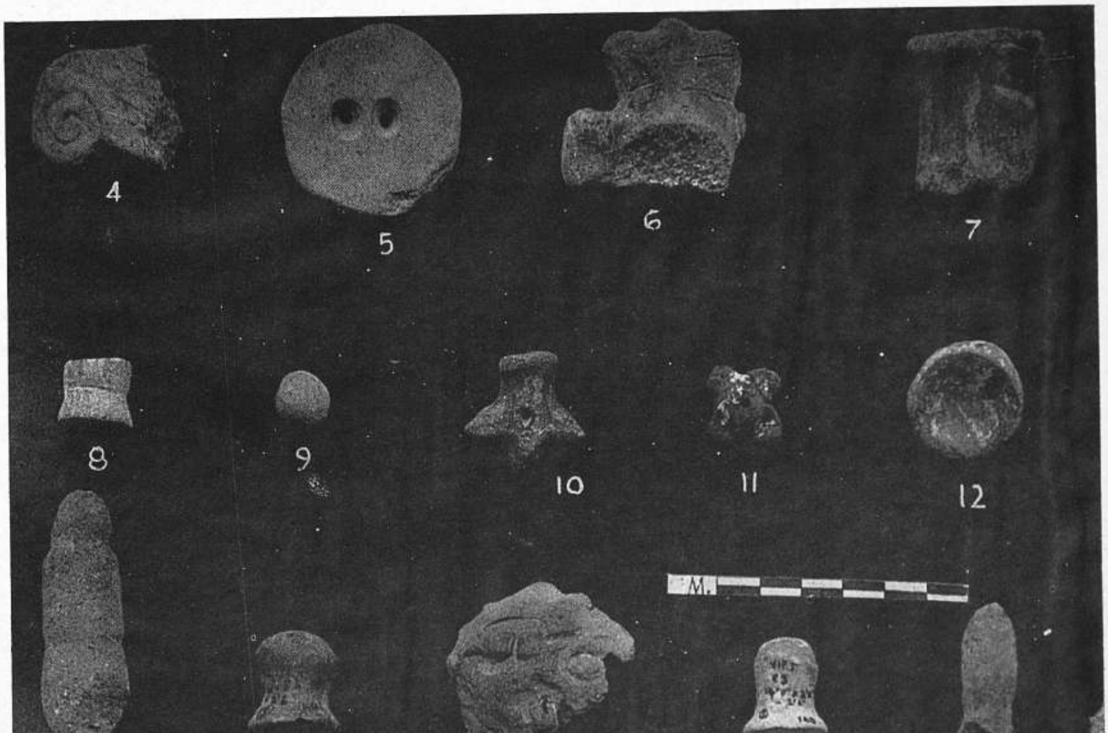
B

Copper coins: A, Vanagiri and Nedavasal and B, Vellaiyan Iruppu



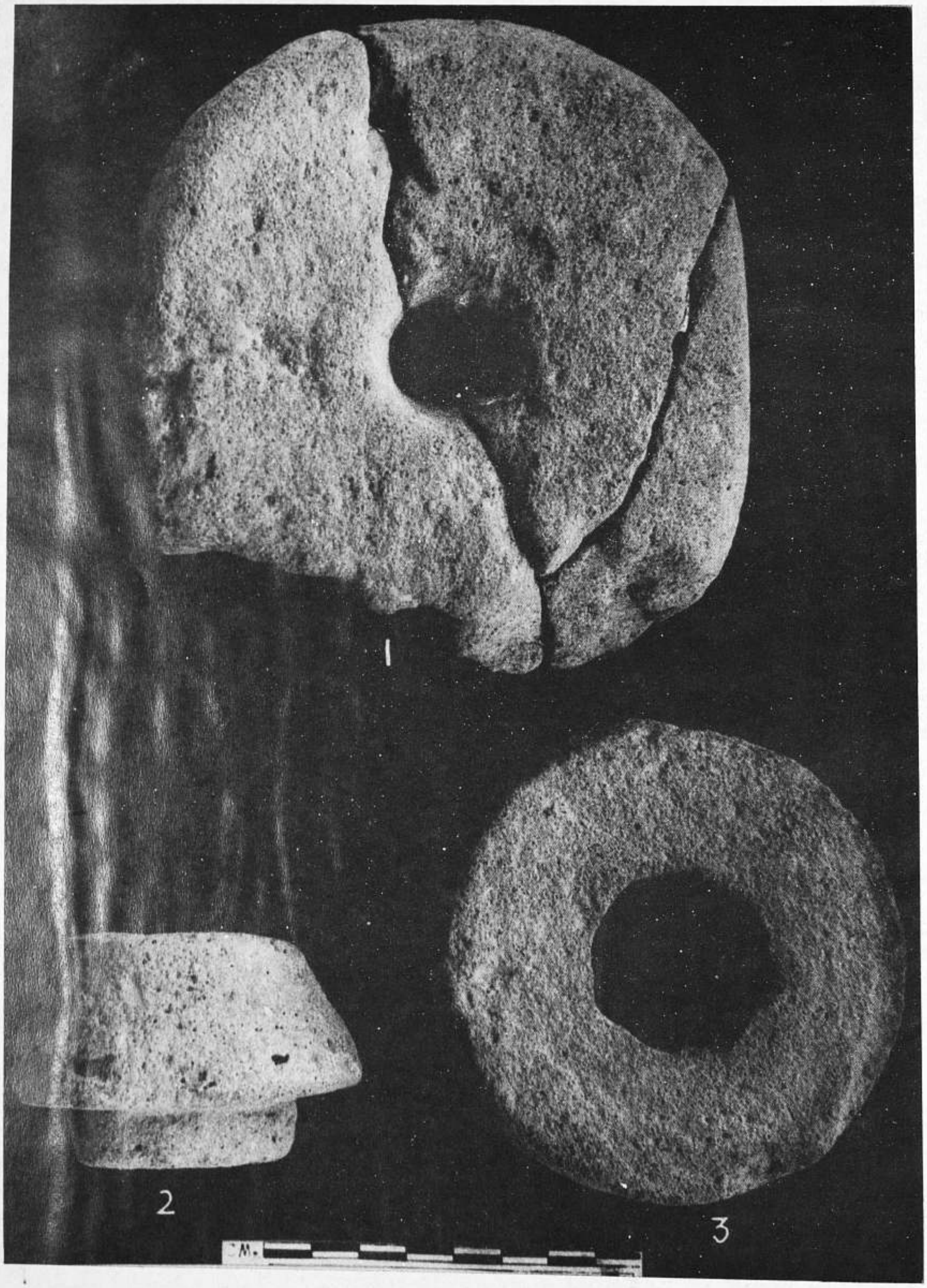
Iron objects from Pallavanesvaram and Vellaiyan Iruppu

A

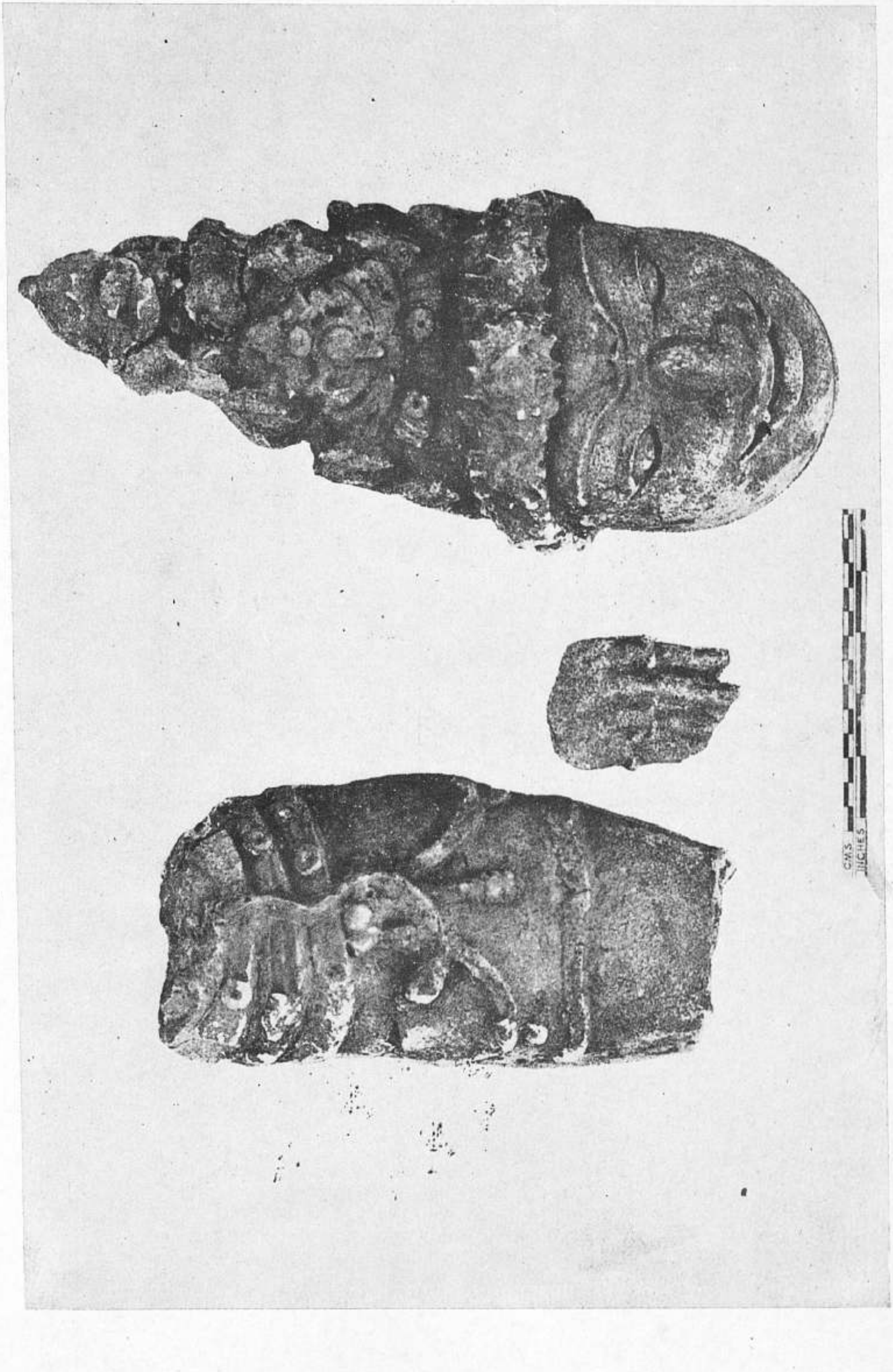


B

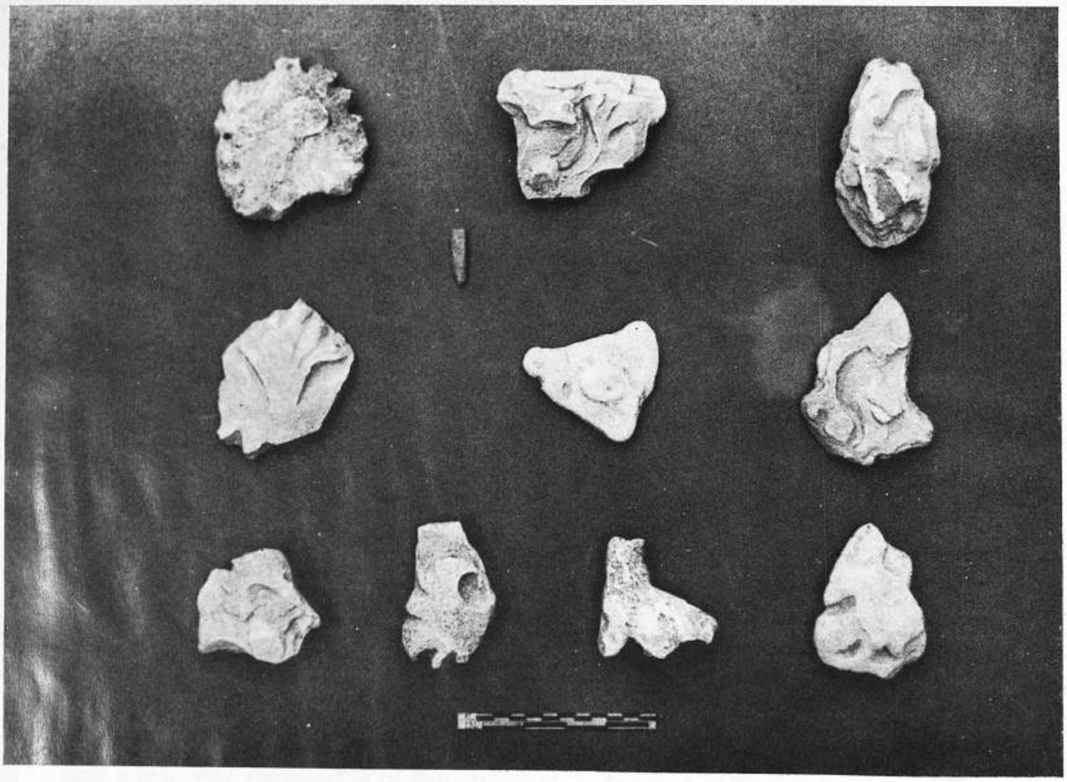
A, Pallavanisvaram: terracotta objects; B, Pallavanisvaram and Vellaiyan Iruppu: terracotta objects



Terracotta wheels from Pallavanisvaram



Stucco head of dvarapala and other portions from Pallavanisvaram



A

B

A, Pallavanisvaram: stucco figurines; B, Vellaiyan Iruppu and Pallavanesvaram: roofing tiles